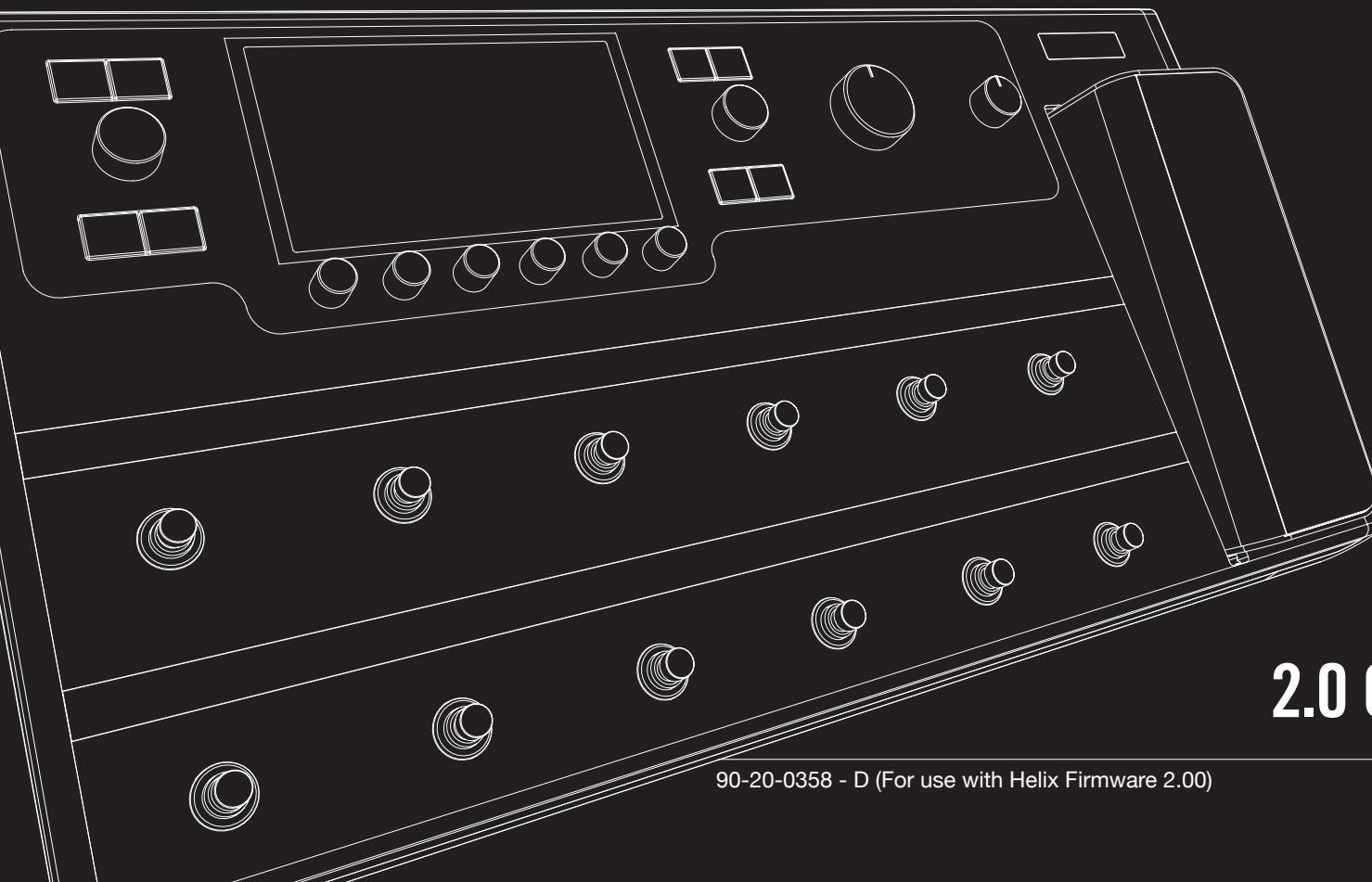




# HELIX



**2.0 OWNER'S MANUAL >**

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# Welcome to Helix

Thank you for purchasing Helix, one of the most powerful and flexible audio processors ever created. We hope it helps drive your search for tonal bliss and spawns years of creativity, both on stage and in the studio.

## What Have I Gotten Myself Into?

Although Helix may appear complicated at first glance, it's designed in such a way that once you learn a few basic concepts and shortcuts, you'll be able to construct both simple and complex tones at nearly the speed of thought, with very little menu diving required.

Although you're likely anxious to rip open the plastic and plug in, wait! At the very least, check out the big color *Helix Cheat Sheet* that came in the box, and keep it handy. Then read the "[Quick Start](#)" chapter of this manual and we'll have you up and shredding in no time.

 **NOTE:** If you prefer to edit tones from your Mac® or PC, download the free *Helix* editor application from [line6.com/software](http://line6.com/software).


 **TIP:** Be sure to also visit [line6.com/videos](http://line6.com/videos) where we're always adding new video tutorials covering the latest Line 6 gear!

## What's In the Box?

- Line 6 Helix
- Full-color *Helix Cheat Sheet* (read that one first!)
- USB flash drive containing the *Helix Owner's Manual* you're reading right now
- AC power cable
- USB cable
- Hex wrench for adjusting the resistance of the Helix expression pedal
- Warranty card

## Common Terminology

While reading this manual, you may encounter several unfamiliar terms. It's important to know what they mean. Don't worry—there's no math.

**Home** The Home screen is your primary workspace for creating and editing tones. If you ever get lost, press  to return to the Home screen.

**Block** *Blocks* are objects that represent various elements of a preset, such as amps, cabs, effects, splits, loopers, inputs, outputs, and impulse responses.

**Path** A *path* represents the signal flow of your tone. Helix has two separate paths, 1 and 2, each with its own input(s) and output(s). Paths can be serial (single) or parallel (dual). Path 1 can be routed into path 2 for more sophisticated tones.

**Preset** A *preset* is your tone. It consists of all blocks on the Home screen, foot-switch assignments, controller assignments, and Command Center messages.

**Setlist** A *setlist* is a collection of presets. Helix has eight setlists containing 128 presets each.

**Model** Each processing block can accommodate one *model* (or in some cases, two models). Helix includes 45 guitar amp models, 7 bass amp models, 30 cab models, 16 mic models, and 93 effects models.

**Controller** *Controllers* are used to adjust various parameters in real time. For example, the expression pedal can be used to control wah, or the tone knob on a Variax guitar can be used to control amp gain and reverb depth.

**Send/Return** *Sends* and *Returns* are used to connect additional equipment to Helix for effects loops or processing multiple instruments simultaneously. Helix has four mono sends and returns, but adjacent pairs can be selected for stereo operation.

**IR** *IRs* (Impulse Responses) are mathematical functions representing the sonic measurements of audio systems (for Helix, speaker cabinet and microphone combinations). Helix can store up to 128 custom or third-party IRs at a time. See "[Impulse Response \(IR\)](#)"

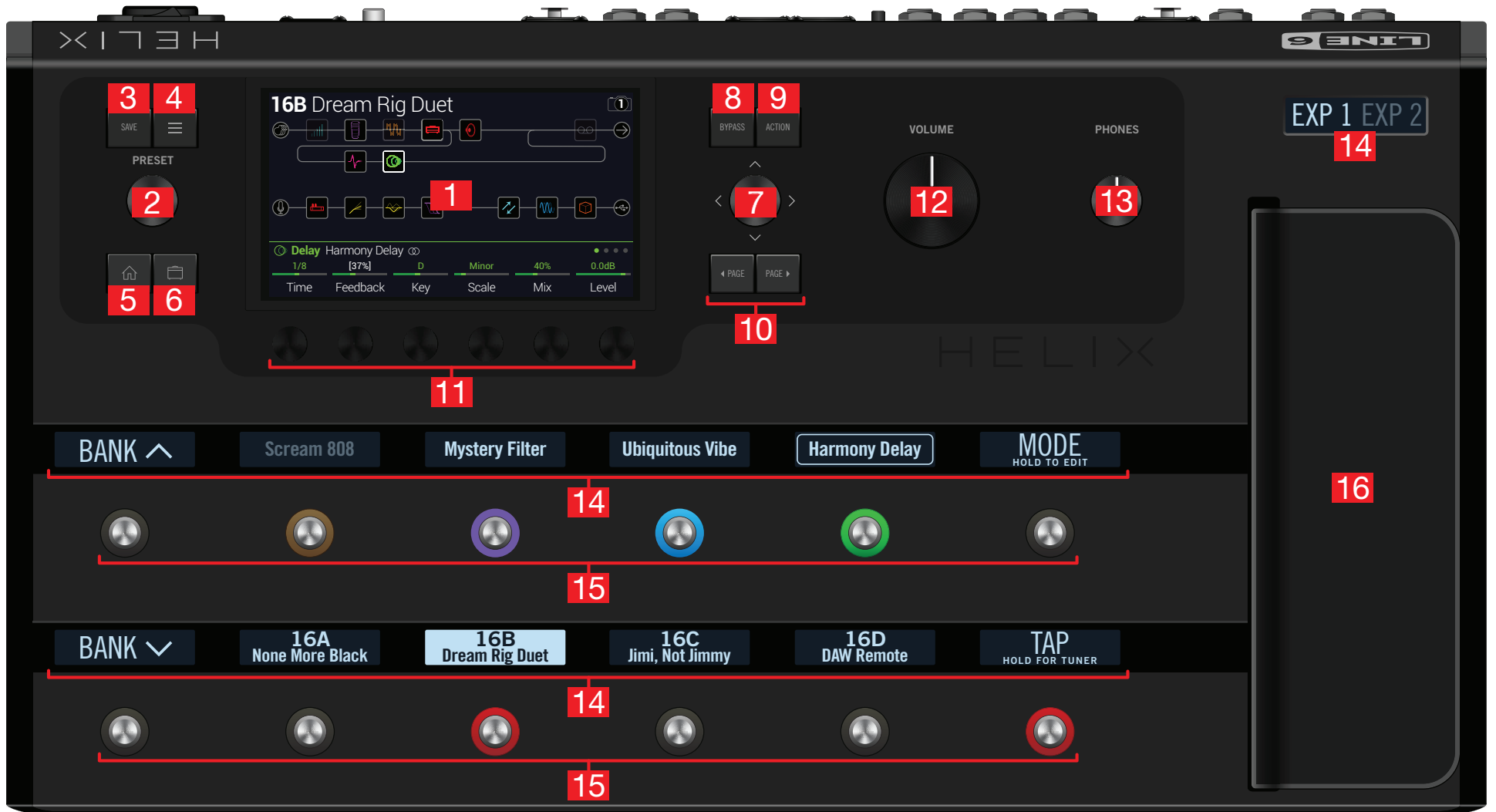
**Variax®** Variax isn't just a great guitar, it also contains special electronics that recreate the sound of other specific guitars and instruments, and allow for instant retuning of each string. Helix and Variax communicate with one another in unique and powerful ways. See "[What is Variax?](#)"




**L6 LINK™** *L6 LINK* provides easy, single-cable, digital audio connectivity between Helix and Line 6 StageSource® monitors and/or DT-Series amplifiers. See "[L6 LINK Output](#)"



**FRFR** *FRFR* (Full Range, Flat Response) speakers, such as Line 6 StageSource monitors, have the ability to amplify a modeler without adversely affecting its tone, ensuring great detail, a wide sweet spot, predictability, and consistency from studio to stage. You could almost think of FRFR monitors as very loud, gig-ready studio monitors.

**DAW** *DAW* (Digital Audio Workstation) refers to any computer (or iPad) used for audio recording. The components of a DAW include an audio interface, audio recording software (such as Cubase®, Logic, Garageband, Pro Tools®, etc.), and monitoring system (amplifier & speakers or headphones). Helix functions as a high-performance USB 2.0 audio interface with all major DAW software - See "[USB Audio](#)"


# Top Panel




1. **Main Display** This large color LCD is your window into the power of Helix.
2. **PRESET** Turn this knob to select a preset. Press the knob to open the Setlist menu. See ["Selecting Presets and Setlists"](#)
3. **SAVE** Press this button to rename and save changes to a preset.
4.  Press this button to dive a bit deeper into Helix, and you'll find Command Center, Global EQ, Global Settings, and other menus.
5.  If you ever get lost, press this button to return to the main Home screen.
6.  Press this button once, or multiple times, to quickly jump to the tonestack parameters (Gain, Bass, Mid, Treble, etc.) of any Amp+Cab, Amp, and Preamp models in the current preset.
7. **Joystick** Move the joystick to navigate the main display. On the Home screen, move the joystick to select a block. Press ACTION and move the joystick to move the selected block. Turn the joystick to change the selected block's model. Press the joystick to open the model list. Yeah, the joystick does a lot.
8. **BYPASS** Press this button to turn the selected block on and off.

 **SHORTCUT:** Press and hold BYPASS to turn Global EQ on (  icon appears in the upper right corner of the LCD) and off.


9. **ACTION** Press this button to open the action panel for the selected block or screen. From the Home screen, the action panel lets you move, copy, paste, and clear blocks. Other screens may have unique action panels; for example, the Global Settings action panel lets you reset all global settings at once.
10. **<PAGE/PAGE>** If the selected block or item has more than one page of parameters, dots appear to the right of the item's name. ● ● ● ● Press < PAGE or PAGE > to view more parameters.
11. **Knobs 1-6** Turn one of the six knobs below the main display to adjust the parameter's value above; press the knob to reset the parameter's value. If a rectangular button appears above a knob, press the knob to engage its function.


 **SHORTCUT:** For most time-based parameters such as delay time or modulation speed, press the knob to toggle between setting the value in ms or Hz and note divisions (1/4-note, dotted 1/8-note, etc.).


 **SHORTCUT:** Controllers can be assigned to most parameters. Press and hold a parameter's knob to quickly jump to the ["Controller Assign"](#) page for that parameter.


12. **VOLUME** Turn this knob to control the Helix device's main output volume.

13. **PHONES** Turn this knob to control volume from the PHONES output.
14. **Scribble Strips** The thirteen Helix LCD scribble strips tell each footswitch's current assignment, so there are never any surprises during a show. If a particular footswitch has more than one block or item assigned, the scribble strip may read "MULTIPLE (X)," where X is the number of assignments. You can custom label scribble strips - see ["Customizing a Footswitch Label"](#)
15. **Footswitches** The capacitive, touch-sensitive footswitches have colored LED rings that tell you the current state of the assigned block or item. While in Stomp footswitch mode, touch (but don't press) a footswitch to quickly select the assigned block or item. Touch the switch repeatedly to cycle through multiple assigned items. See ["Stomp Footswitch Mode"](#)


 **SHORTCUT:** While in Stomp footswitch mode, touch (but don't press) a footswitch for two seconds to assign that switch to the selected block.

 **SHORTCUT:** While in Stomp footswitch mode, touch and hold (but don't press) two switches to swap all assignments between them (including any custom scribble strip names or LED colors).

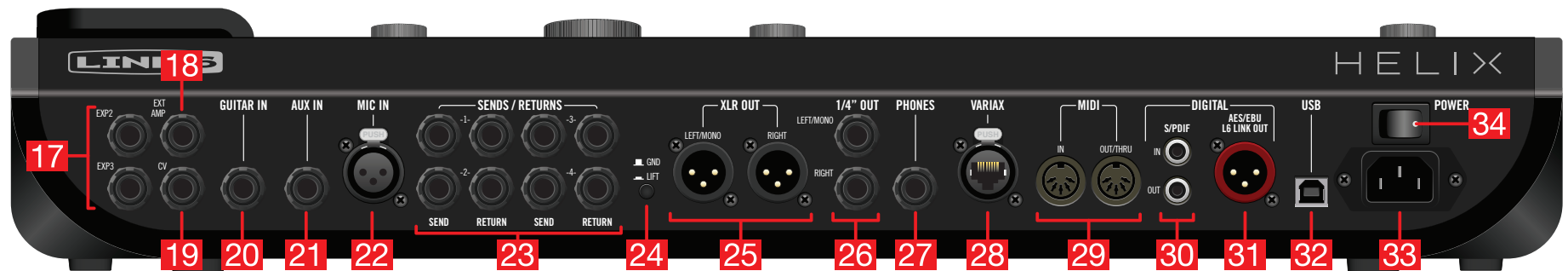
 **SHORTCUT:** Touch (but don't press) TAP to briefly display the tempo panel. This lets you quickly fine-tune the current tempo without navigating to the Global Settings > MIDI/Tempo menu.

 **NOTE:** The "Touch-Select" feature can optionally be turned off, and other footswitch settings customized - See ["Global Settings > Footswitches"](#)

16. **Expression Pedal** Move the expression pedal to control volume, wah, or a combination of amp and/or effects parameters. Activate the hidden toe switch to toggle between EXP 1 and EXP 2. (The scribble strip above tells you which one is active.) If an external pedal is connected to the rear panel EXP 2 jack, the built-in pedal becomes EXP 1 only. See ["Controller Assign"](#)

 **NOTE:** Adding a Wah or Pitch Wham block automatically assigns it to EXP 1. Adding a Volume Pedal or Pan block automatically assigns it to EXP 2.

# Back Panel



- 17. EXP 2 and 3** Two additional expression pedals can be connected to Helix and assigned to adjust a wide variety of parameters. See ["Controller Assign"](#)
- 18. EXT AMP 1/2** Connect to your traditional guitar amp to switch its channels or turn its reverb on and off. Use a TRS cable for dual operation (1=tip, 2=ring).
- 19. CV/Expression Out** Connect to the expression pedal input on stompboxes or CV (Control Voltage) input on vintage pedals or synths.
- 20. GUITAR IN** Connect your primary guitar or bass guitar here. This jack provides impedance selection and a switchable pad.
- 21. AUX IN** (10k $\Omega$ ) Connect a secondary, active-pickup equipped guitar or bass here.
- 22. MIC IN** Plug your microphone in here for processing your vocals or recording to your computer via USB. This XLR jack provides 48V phantom power for studio condenser mics and a variable low cut filter.
- 23. SENDS/RETURNS 1-4** These 1/4" ins and outs can be used as FX loops for inserting external stompboxes into your tone or as additional inputs and outputs for connecting keyboards, drum machines, mixers, and other gear. See ["Send/Return"](#)
- 24. Ground Lift Switch** If you are experiencing hums and buzzes, press this button in to eliminate ground loops between your equipment.
- 25. XLR OUT** Use balanced XLR cables to connect to your studio gear or the house mixer, PA or FRFR speaker(s) when playing live. When using a mono playback system, connect only the LEFT/MONO XLR jack.
- 26. 1/4" OUT** Use unbalanced 1/4" TS cables to connect to your guitar amp, FRFR

speaker(s), studio monitors, or other playback system. When using a single amp or speaker, connect only the LEFT/MONO 1/4" jack.

- 27. PHONES Out** (12 $\Omega$ ) Connect stereo headphones here; turn the top panel PHONES knob to adjust volume.

**NOTE:** Helix provides plenty of gain for high impedance headphones. With lower impedance headphones, you may notice a bit of distortion if the PHONES knob is turned all the way up. This is normal.

- 28. VARIAX Input** This input provides power, digital audio, effects control, and instant recall between Helix and a Line 6 Variax guitar. See ["What is Variax?"](#)
- 29. MIDI IN, OUT/THRU** Connect Helix to your MIDI gear for sending and receiving program changes, continuous controllers, and other MIDI messages.
- 30. S/PDIF IN/OUT** Digitally connect Helix to your studio equipment via S/PDIF (75-ohm RCA) cables.

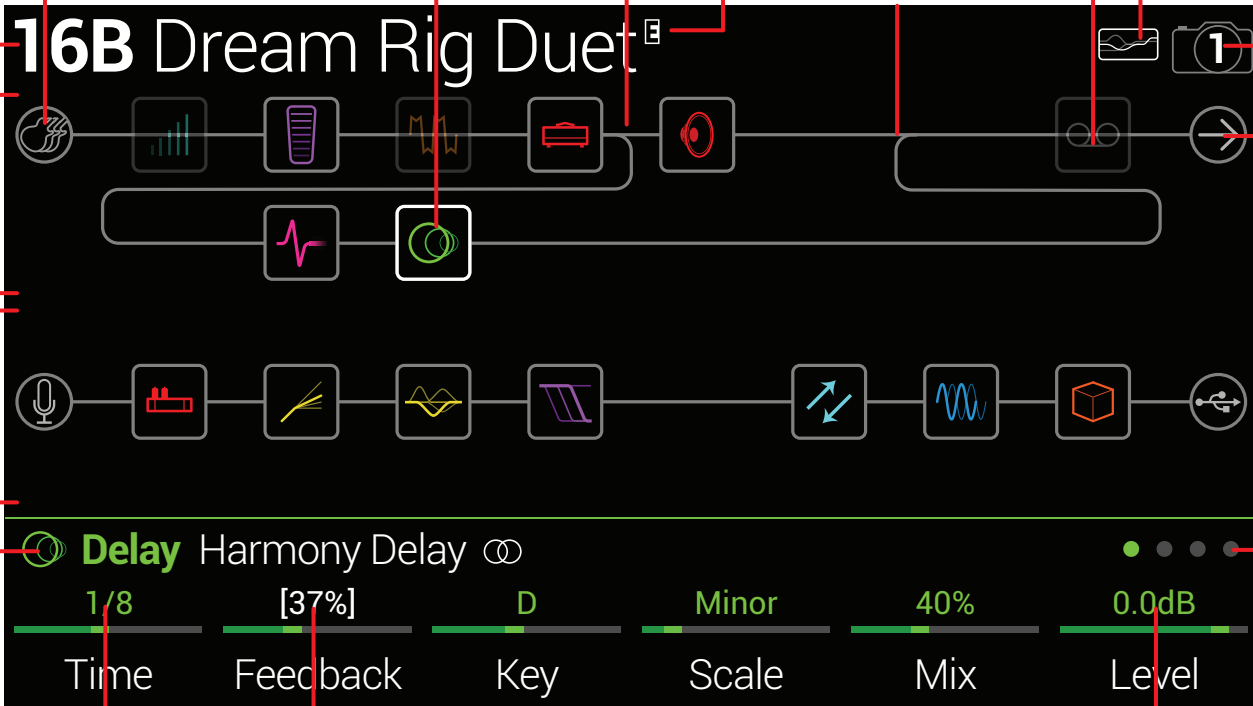
**NOTE:** S/PDIF and AES/EBU cannot be active at the same time. See ["Global Settings > Ins/Outs"](#)

- 31. AES/EBU, L6 LINK** L6 LINK provides easy digital audio connectivity between Helix and Line 6 StageSource monitors and/or DT-Series amplifiers. Alternatively, digitally connect Helix to your studio equipment via an AES/EBU (110 $\Omega$  XLR) cable. See ["L6 LINK Output"](#)
- 32. USB** Helix also functions as a high quality, multi-in/out, 24-bit/96kHz audio interface for Mac<sup>®</sup> and Windows<sup>®</sup> computers, with DI, Re-amping and MIDI functionality built right in. Helix can also record to an Apple iPad (with optional Apple Camera Connection Kit). Use of a USB 2.0 or 3.0 port is required - Do not use an external USB hub. See ["USB Audio"](#)
- 33. AC In** Connect Helix to a grounded AC power outlet.
- 34. POWER switch** It's alive!

# Home Screen

90% of your daily tone building is accomplished from the Home screen.

Press  at any time to return to the main Home screen.



Turn PRESET to select a preset

Select an input block and turn the joystick to set the input source. Each path can have one or two input blocks

Use the joystick or touch a switch top to select a block (outlined in white)

Split block (only visible when selected); move down to create a duplicate input block

"E" appears if the preset has been edited

Merge block (only visible when selected); move down to create a duplicate output block


Press BYPASS to turn block on and off (bypassed blocks appear dim)

Hold BYPASS to turn Global EQ on and off; Icon appears when Global EQ is on

Turn PRESET and then turn Knob 5 (Select Snapshot) to choose one of eight snapshots

Each of the two signal paths can be either parallel (A and B) or serial (A only)

Select an output block and turn the joystick to route the signal to back panel jacks, Path 2, or your computer via USB. Each path can have one or two output blocks

Turn the joystick to select a model; press the joystick to open the model list.  indicates a stereo model

Press <PAGE/PAGE> to view more parameters for the selected block. This block has four pages

Press knob to toggle between note value and ms (or Hz)

Value appears white and in brackets if a controller or snapshot is assigned to it


Turn knobs 1-6 to adjust parameters for the selected block

Press knob to return Levels to unity (0.0dB) and Pans to center

**16B Dream Rig Duet**

**PATH 1**

**PATH 2**

**Delay** Harmony Delay 

1/8 [37%] D Minor 40% 0.0dB

Time Feedback Key Scale Mix Level



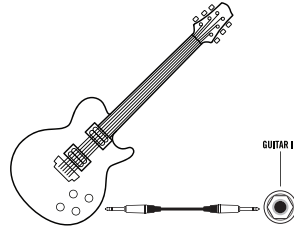
# Quick Start

## Setting Proper Output Levels

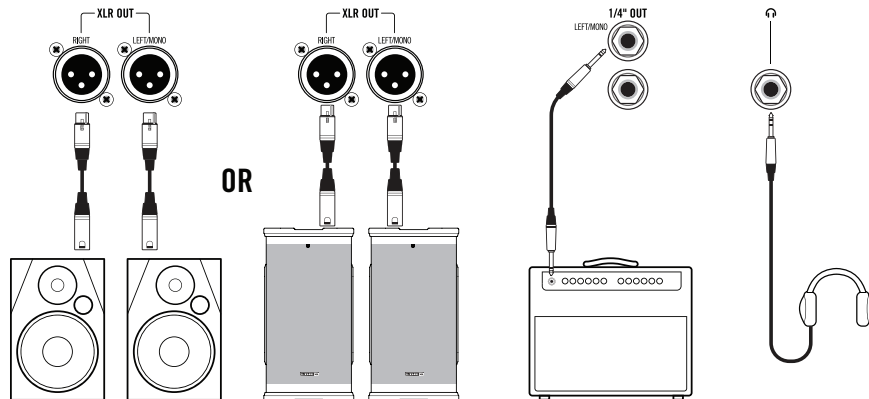
1. Make sure the **VOLUME** and **PHONES** knobs are turned down.



2. Connect a guitar to the Helix **GUITAR IN** jack.



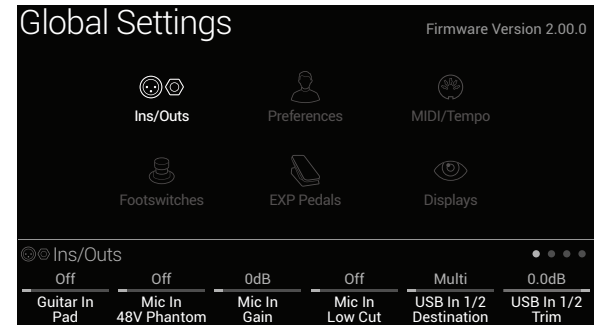
3. Connect the Helix outputs to your playback system.



The Helix device's 1/4" and XLR output levels must be set to match your playback system. If you're only using headphones for now, skip to step 9.

4. Press **≡** to open the Menu.
5. Press **Knob 6 (Global Settings)**.

The Global Settings screen appears:



6. If necessary, move the joystick to select the **Ins/Outs** submenu.
7. Press **PAGE >** to select **••••**.
8. Using **Knobs 1 and 2** under the display, set levels according to the table below:

Output	Are you connecting to...?	Then do this:
1/4"	Guitar pedal or the front of a guitar amp	<b>Set 1/4" Outputs to "Instrument"</b>
	Powered speakers with unbalanced inputs or digital recorder	<b>Set 1/4" Outputs to "Line"</b>
XLR	Mic inputs on mixer or standalone mic preamps	<b>Set XLR Outputs to "Mic"</b>
	PA/FRFR speakers or studio monitors with balanced inputs	<b>Set XLR Outputs to "Line"</b>

9. **Slowly turn up the VOLUME knob.**

If you're listening on headphones, slowly turn up the **PHONES** knob.

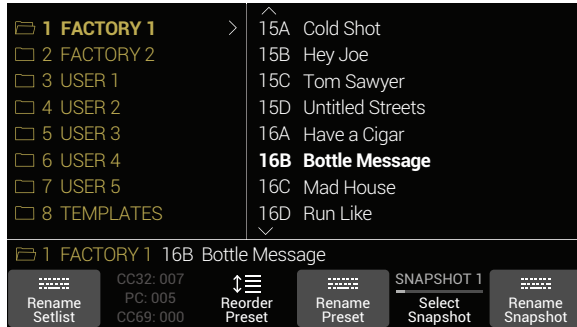


# Selecting Presets and Setlists

## 1. Turn PRESET to select presets within the current setlist.

Helix stores eight setlists, each containing 32 banks of four presets (A, B, C, and D). As we promised, no math - that's a grand total of 1,024 preset locations. If that's not enough, your cover band should be asking for more money.

## 2. Press PRESET to open the Setlist menu:



Navigating the Setlist menu is straightforward:

Turn the joystick (or move it up and down) to select items in a list.

From the Setlist column, press the joystick (or move it right) to load its first preset.

From the Preset column, move the joystick left to go back to the Setlist column.

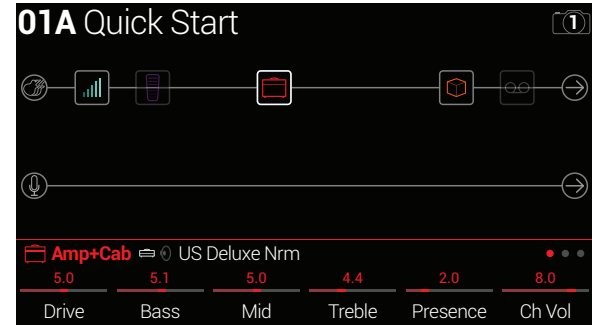
Turn Knob 3 (Reorder Preset) to move the selected preset up and down the list.

## 3. Use the joystick to select Setlist 8 TEMPLATES > Preset 01A Quick Start.

**TIP:** The dark text above Knob 2 displays the required MIDI messages for recalling the Helix device's setlists, presets, and/or snapshots from external MIDI devices or software. In the illustration above, the **FACTORY 1** setlist is recalled with a CC32 message of 007, the **16B Bottle Message** preset is recalled with a PC (program change) message of 005, and **SNAPSHOT 1** is recalled with a CC69 message of 000.

## 4. Press to return to the Home screen.

You should see something like this:

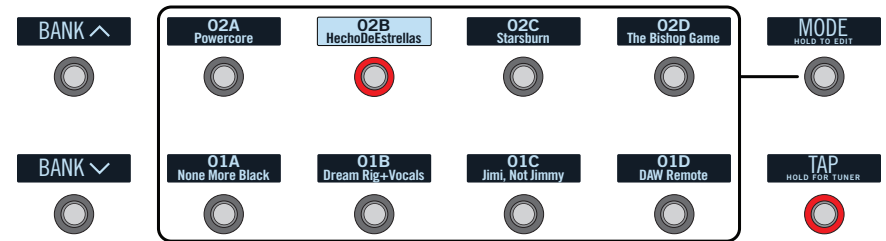


# Preset Footswitch Mode

Preset mode is used to navigate presets in the current setlist.

## 1. If not already there, press FS6 (MODE) to select Preset mode.

The middle eight switches display two banks of presets and the active preset appears with a red LED ring and white scribble strip:



## 2. Press BANK ^ or BANK v to choose the desired banks.

The banks' presets flash, indicating they're ready to load.

## 3. Press one of the eight preset switches to load the preset.

**NOTE:** Footswitch behavior can be customized. See ["Global Settings > Footswitches"](#)

# Stomp Footswitch Mode

While in Stomp mode, each of the middle eight footswitches can do a number of things:

- Toggle one or more blocks on and off
- Toggle between two values of one or more parameters
- Generate a MIDI, External Amp control, or CV/Expression message
- All of the above, even simultaneously

**If not already there, press FS6 (MODE) to select Stomp mode.**

The middle eight footswitches display blocks' model names, parameter names, Command Center messages, and/or customized labels:



**NOTE:** If a switch is assigned to multiple blocks or items, its scribble strip reads "MULTIPLE (X)," where X is the number of assignments, and stepping on the switch turns them all on and off. If some blocks are on and some are bypassed, stepping on the switch toggles each block's bypass state.

**NOTE:** While in Stomp mode, stepping on BANK ^ or BANK v temporarily enters Preset mode. Once you've selected a preset, Helix returns to Stomp mode.

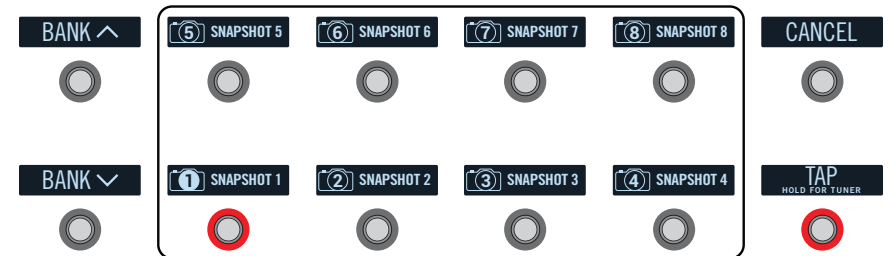
# Snapshot Footswitch Mode

Similar to the snapshots feature in some high end digital mixers, each of the Helix device's eight snapshots stores and recalls the state of certain elements in the current preset, including:

- **Block Bypass**—The bypass (on/off) state of all processing blocks (except Looper), independent of any footswitch assignments. Also see "[Snapshots > Block Bypass](#)")
- **Parameter Control**—The values of any parameters assigned to controllers (up to 64 per preset). Also see "[Snapshots > Parameter Control](#)"
- **Command Center**—The values of any instant MIDI CC, Bank/Prog, MMC, and CV Out messages, plus the state (dim or lit) of any CC Toggle, CV Toggle, and Ext Amp messages. Also see "[Command Center](#)"
- **Tempo**—The current system tempo, if "[Global Settings > MIDI/Tempo](#)" > Tempo Select is set to "Per Snapshot." (By default, it's set to "Per Preset")

**1. Press BANK ^ and BANK v simultaneously to enter Snapshot mode.**

The middle eight switches flash, indicating a snapshot is ready to be selected.



**2. Press one of the eight snapshot switches to select it.**

**NOTE:** Snapshots are powerful enough to warrant their own chapter. See "[Snapshots](#)" for more information.

**NOTE:** If you don't want Snapshot footswitches to disappear after selecting one, set "[Global Settings > Footswitches](#)" > Knob 4 (Snapshot Mode Switches) to "Manual Return." In this case, Helix stays in Snapshot footswitch mode until you press FS6 (CANCEL).

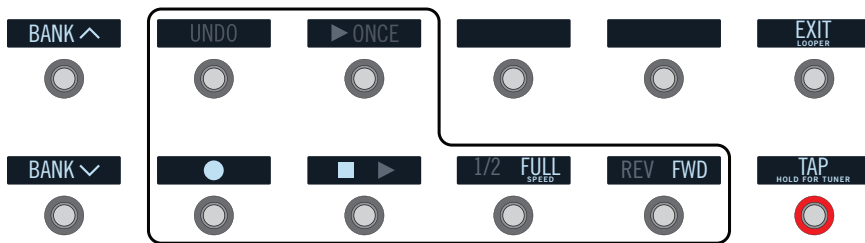
# Looper Footswitch Mode

Looper mode is only available if a Looper block has been assigned to a footswitch in Stomp mode. Nearly all factory presets in Helix have a Looper block assigned to a footswitch, but your custom presets may not.

Looper Type	Max. Loop Length (1/2 Speed)	Max. Loop Length (Full Speed)
Mono	120 seconds	60 seconds
Stereo	60 seconds	30 seconds

## 1. From Stomp mode, press the footswitch labeled “Looper” (if available).

Looper mode appears:



Switch	Description
●	Step on ● to start recording a loop. Step on ■ ► to end the loop and immediately start playback. Step on ● to overdub additional parts. Step on ■ ► again to stop playback.
UNDO	If you make a mistake on your last overdub, step on UNDO to erase it.
► ONCE	Step on ► ONCE to play the recorded loop once through.
1/2 FULL SPEED	Recording at full speed and then switching to 1/2 speed will also drop the loop down one octave. Recording at 1/2 speed will double your looping memory and switching to full speed will cause the loop to play at double speed (up an octave).
REV FWD	Step on REV/FWD to hear your loop backwards.

**NOTE:** If you press ● while loop playback is stopped, this will always record a new loop, and any previous recording will be discarded.

**IMPORTANT!** You may change presets while looping, but loop playback will stop unless the preset you select includes the same type of looper block (mono or stereo) on the same path (1 or 2) and is assigned to a footswitch.

**NOTE:** While in Looper mode, stepping on BANK ^ or BANK v temporarily enters Preset mode. Once you’ve selected a preset, Helix returns to Looper mode.

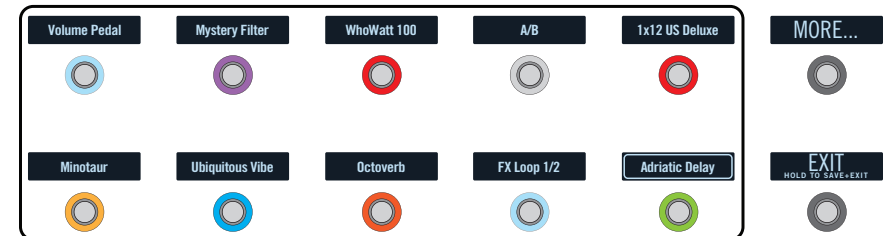
## 2. To return to the previous mode, press FS6 (EXIT).

# Pedal Edit Mode

Most blocks can be edited without taking your hands off the guitar; if you hate having to reach down and twist knobs, Pedal Edit mode will be your new best friend. Although Pedal Edit is not intended to replace proper controller assignment, in a pinch, it can also be used to tweak one parameter at a time during a performance.

## 1. Hold FS6 (MODE) for two seconds.

The preset's processing blocks appear on the footswitches, flashing:

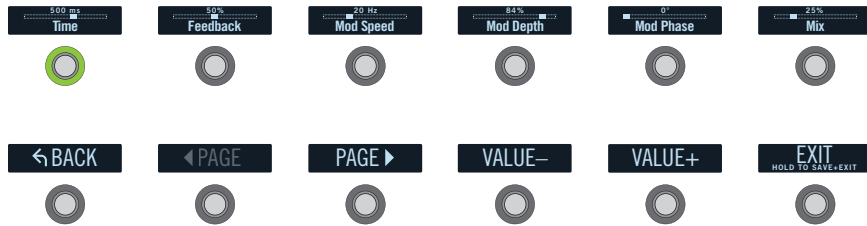


If the preset has more than ten processing blocks, you may not see the block you want. **Press FS6 (MORE...) one or more times until you do.**

**NOTE:** Selecting a block in Pedal Edit mode has no correlation to any foot-switch assignment it may have.

## 2. Press the footswitch displaying the block you want to edit.

The block's first page of parameters appear at FS1—FS6.



If the block has more than one page of parameters, press FS8 (<PAGE) or FS9 (PAGE>) until you find the parameter.

## 3. Press the footswitch displaying the parameter you want to adjust.

Press and hold a Time or Speed switch to toggle between setting the value in ms or Hz and note divisions (1/4-note, dotted 1/8-note, etc.).

## 4. Use the expression pedal to adjust the parameter.

For fine adjustment, press FS10 (VALUE-) and FS11 (VALUE+). Hold FS10 (VALUE-) or FS11 (VALUE +) for faster adjustments.

To select a different block, press FS7 (BACK).

## 5. When finished, press FS12 (EXIT).

If you want to save any changes made to the preset, hold FS12 (EXIT) for two seconds.

# Selecting Blocks/Adjusting Parameters

Blocks are objects that represent various elements of a preset, such as amps, cabs, effects, splits, loopers, and even inputs and outputs.

## 1. From Stomp footswitch mode, briefly touch (but don't press) the footswitch assigned to the desired block.



The selected block appears with a white box on both the main LCD and the scribble strip:



If multiple blocks are assigned to a footswitch, its scribble strip reads "MULTIPLE (X)." Touch the top of the switch repeatedly until the desired block is selected.

**NOTE:** Repeatedly touching a "MULTIPLE (X)" switch may jump to completely different screens, depending on its assignments. For example, if a switch is assigned to an effect block, an effect parameter, and a Command Center MIDI message, repeated touches will cycle through all three items on the Home, Controller Assign, and Command Center screens, respectively. Basically, anything on the switch is only a touch away.

## Alternatively, move the joystick to select a block.

**SHORTCUT:** Press  to quickly select the Amp+Cab, Amp, or Preamp block and its tonestack parameters (Gain, Bass, Mid, Treble, etc.) appear. If a preset has more than one of these blocks, press  repeatedly to cycle through all tonestacks.

## 2. Turn Knobs 1-6 below the screen.

Some blocks have more than one page of parameters, in which case dots on the right side of the inspector indicate the current page. For example, the dots below indicate that page 1 parameters are visible (the colored dot) and a total of four pages of parameters are available:



## 3. Press <PAGE/PAGE> to access more parameters (if available).

# Bypassing a Block

If a footswitch is assigned to the block, press the switch.

Alternatively, select the block and press **BYPASS** to toggle the block on and off.

Bypassed blocks appear semitransparent and, if assigned to a footswitch, its LED ring dims and scribble strip label grays out:



**NOTE:** The switch's LED ring and scribble strip label reflect the color and bypass state of its most recently selected block or item, even if other blocks assigned to the same switch are enabled.



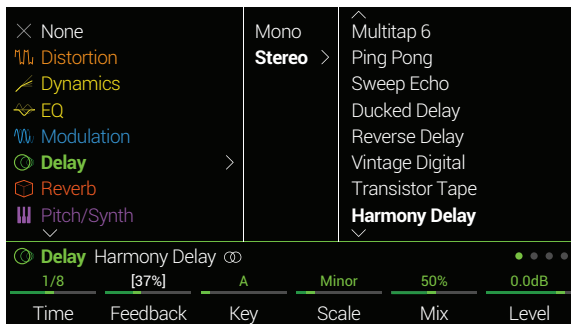
# Choosing a Block's Model

To change an existing block's model, select the block and turn the joystick.

To create a new block, select an empty location and turn the joystick.

Selecting models within the same category can be very quick. However, as Helix has hundreds of items to choose from, using this method to, say, change a mono distortion block (beginning of the list) into a stereo FX Loop block (end of the list) is very slow. Instead, you should open the model list:

1. Press the joystick to open the model list:



Most model categories include subcategories. For example, effects can generally be mono or stereo (stereo models display the icon). Amp+Cab and Amp models have Guitar and Bass subcategories. Cab models have single and dual subcategories.

Turn the joystick (or move it up and down) to select items in a list.

Press the joystick (or move it right) to view a category or subcategory's contents.

Move the joystick left to go back one column.

**IMPORTANT!** If you encounter items in the list that are grayed out or unavailable, this means the current path (1 or 2) cannot accommodate that category, subcategory, or model. See ["Dynamic DSP"](#)

2. Using the joystick, select the desired category, subcategory, and model.

**NOTE:** Amp+Cab and Cab > Dual blocks are special in that they represent two models within a single block. To change the amp model in an Amp+Cab block, press <PAGE> until the amp icon is white and turn the joystick. To change the cab model, press PAGE> until the cab icon is white and turn the joystick.



To change the first cab model in a Cab > Dual block, press <PAGE> until the left cab icon is white and turn the joystick. To change the second cab model, press PAGE> until the right cab icon is white and turn the joystick.



3. To close the model list, select an item in the far right column and press the joystick again (or press ).

# Choosing an Input

Move the joystick left to select an Input block and turn the joystick.

Normally you should select "Multi," which includes three simultaneous inputs: Guitar, Aux, and Variax.



**TIP:** To view a list of available inputs, press the joystick.

**SHORTCUT:** From any Input block, joystick left to jump to the Output block. From any Output block, joystick right to jump to the Input block. We call this the "Pac Man Shortcut."

# Choosing an Output

Move the joystick right to select an Output block and turn the joystick.

Normally you should select "Multi," which includes four simultaneous pairs of outputs: 1/4", XLR, Digital, and USB 1/2.



If Path 1 doesn't have enough block locations or DSP to accommodate your tone, it can be routed to Path 2:

Select Path 1's output block and turn the joystick to select Path 2A.



Path 2's Input block displays an arrow, indicating it is being fed by Path 1.



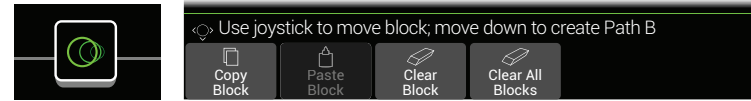
If Path 2 has two input blocks, you may select either Path 2A or 2B, or even split your signal further to both 2A and 2B. See "[2 into 1](#)" for an example.

**TIP:** To view a list of available outputs, press the joystick.

# Moving Blocks

1. Select any block (other than Input or Output) and press ACTION.

The block appears "picked up" and the action panel appears. The inspector's icon shows you the directions in which the block can be moved.



2. Move the joystick left or right to move the block.

Moving the joystick down moves the block to a new parallel B path. See "[Serial vs. Parallel Routing](#)" for details.

**NOTE:** A block on Path 1 cannot be moved to Path 2 (and vice versa). You can, however, copy and paste a block from one path to the other. See next section.

3. Press ACTION again (or to close the action panel.

# Copying and Pasting a Block

Blocks from one path can be copied and then pasted into the same path, the other path, or a path in an entirely different preset.

1. Select the block you wish to copy and press ACTION.
2. Press Knob 1 (Copy Block).
3. Select the location you wish to paste the block—even in a different preset—and press ACTION.
4. Press Knob 2 (Paste Block).

**NOTE:** Inputs, Outputs, Splits, Merges, and Loopers can also be copied and pasted. However, if you, for example, try pasting the Looper into the Split block's location, Knob 2 (Paste Block) will be grayed out. Furthermore, if the destination path's DSP cannot accommodate the copied block, the header will briefly read "Cannot Paste—Path 1 [or 2] DSP Full!" See "[Dynamic DSP](#)"



## Clearing a Block

1. Select the block you wish to clear and press **ACTION**.
2. Press Knob 3 (Clear Block).

## Clearing All Blocks

Clearing all blocks removes all processing blocks (including the Looper) and resets both Path 1 and 2 to serial. It does not affect Path 1A or Path 2A Input and Output blocks, nor does it affect the "[Command Center](#)"

1. Press **ACTION**.
2. Press Knob 4 (Clear All Blocks).

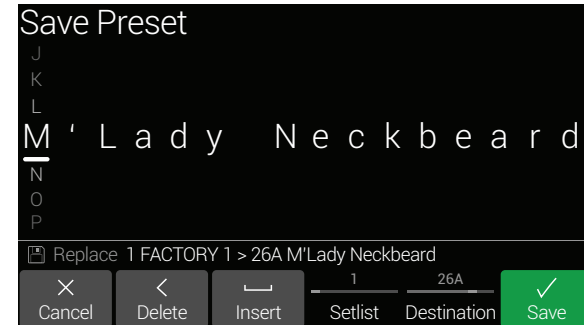
The following dialog appears:



3. Press Knob 6 (OK).

## Saving/Naming a Preset

1. Press **SAVE** to open the Save Preset screen:



Move the joystick left or right to move the cursor.

Turn the joystick (or move it up/down) to change the selected character.

Press Knob 2 (Delete) to delete the selected character and shift all following characters to the left.

Press Knob 3 (Insert) to insert a space and shift all following characters to the right.

**SHORTCUT:** Press the joystick to cycle through A, a, 0, and [SPACE].

2. Turn Knob 4 (Setlist) and Knob 5 (Destination) to choose the **Setlist and Preset location you wish to overwrite.**  
Any of the Helix 1,024 presets can be overwritten.
3. Press **SAVE** again or Knob 6 (Save).



# Serial vs. Parallel Routing

For many guitar tones, a serial (one stereo path) signal flow is more than adequate. For example, our **8 TEMPLATES > 01A Quick Start** preset has a volume pedal, wah pedal, Amp+Cab, reverb, and looper, but there's still room for distortion, modulation, and delay blocks:



For more sophisticated tones, a parallel (two stereo paths) signal flow can be created. This lets one split the signal into two stereo paths, process them separately, and mix the two paths back together.

**1. Select the Amp+Cab block and press ACTION to pick it up.**

**2. Move the joystick down.**

The Amp+Cab block is moved to a newly created parallel path B (lower).



In the illustration above:

*Our guitar signal goes into the Volume and Wah blocks.*

*The signal is split to path 1A (upper) and path 1B (lower).*

*Stereo path 1A (upper) is sent to the Reverb and Looper blocks and Stereo path 1B (lower) is sent to the Amp+Cab block.*

*Stereo paths 1A and 1B are merged together after the Looper block and sent to the Multi Output.*

**3. Press ACTION again to drop the Amp+Cab block.**

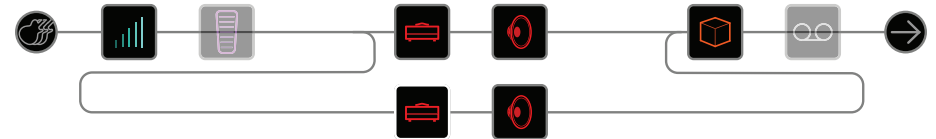
This preset probably doesn't sound ideal. A more appropriate tone may have paths 1A and 1B each with an Amp+Cab block, only to merge again before the Reverb...



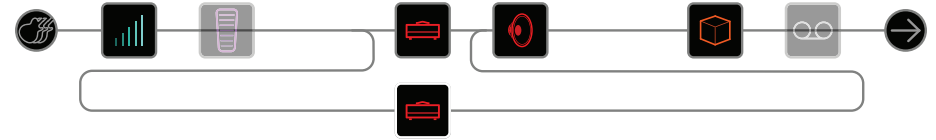
...or maybe a single Amp block splitting into two separate Cab blocks...



...or two separate Amp and two separate Cab blocks...



...or two separate Amp blocks merging into a Cab > Dual block.



Remember, this is only half of your tone. You still have Paths 2A and 2B to play with!

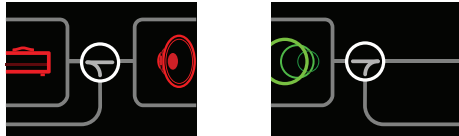
## Removing Parallel Path B

**To remove path B, simply clear any blocks on path B (lower) or move them all back up to path A (upper).**

# Moving Split & Merge Blocks for More Parallel Routings

1. Use the joystick to select the point where paths A and B split or merge.

"Split" and "Merge" blocks only appear when selected, but can be adjusted and moved like any other processing block.



2. Press ACTION to pick up the Split or Merge block for moving.

Choose one of the following parallel routing options:

## 2 into 1

### Move the Split block down to path B.

The Split block shifts left and a duplicate Input block is created:

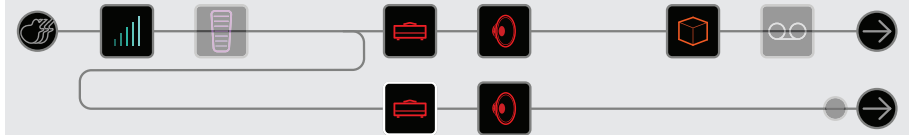


This new Input block can be assigned to a completely different input. This routing can be used for mixing a guitar and vocal, or the models and magnetic pickups in a connected Variax guitar, each with their own processing blocks.

## 1 into 2

### Move the Merge block down to path B.

The Merge block shifts right and a duplicate Output block is created:

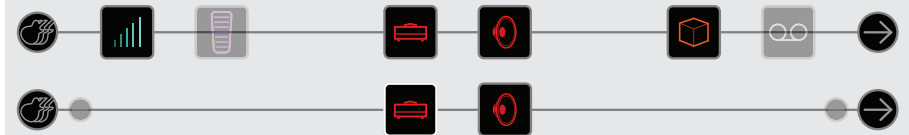


In this example, the Input block is split to paths A and B, each with its own Output block. Path A could be routed to the 1/4" outputs while path B could be routed to the XLRs.

## True Parallel

### Move both the Split and the Merge blocks down to path B.

Duplicate Input and Output blocks are created:



In this routing, a guitar and vocal could be processed independently, each with its own input, stereo path, processing blocks, and outputs. Alternatively, two different band members could be processed independently.

## Super Serial

A serial path has eight processing block locations. If that's not enough, you can use parallel path B to create one big "super serial" path.

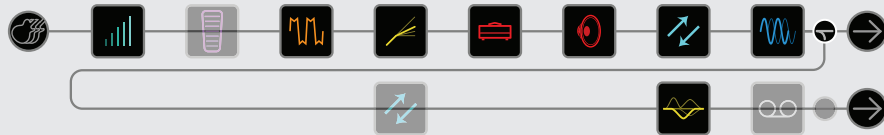
### 1. Move the Merge block down to path 1B.

A duplicate Output block is created.

### 2. Move the Split block all the way to the right, past the last processing block on path 1A.

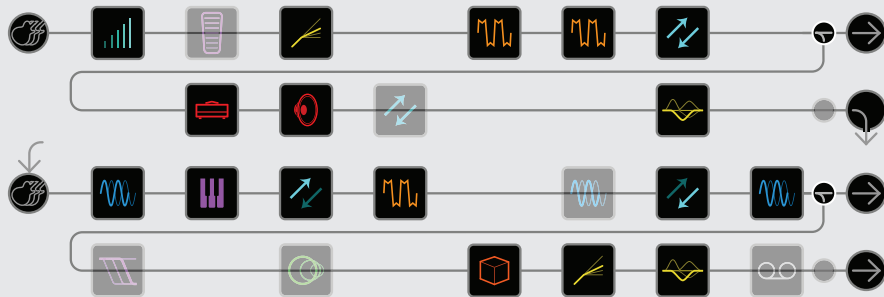
### 3. Select the Output block on path 1A and turn Knob 2 (Level) all the way down.

That way, you're only hearing Output 1B.



In the illustration above, our signal is processed by the eight blocks on path 1A and processed further by the three blocks on path 1B.

Of course, if this still isn't enough, you could always duplicate the above signal flow with path 2 and then route path 1B's output block to path 2A for one gigantic serial tone with up to 32 block locations (DSP permitting - See "[Dynamic DSP](#)"):



## Dynamic DSP

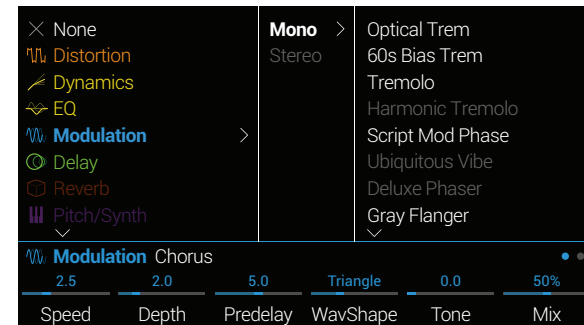
Like nearly all modern audio processors, the Helix engine is based on DSP (Digital Signal Processing). Some models require many times more DSP horsepower than others, so it makes logical sense that fewer of those models could exist in a tone. To work around this, some processors restrict you to one amp, one reverb, one delay, etc. With Helix, we feel it's important to let you keep adding whatever you want to your tone, even if you may eventually run out of DSP.

That said, there are some rules governing the number of certain types of blocks you can add to a preset:

- Amp+Cab, Amp, or Preamp blocks** Any combination, up to four (two per path)
- Cab blocks (includes Amp+Cab blocks)** Up to four (two per path; Cab > Dual blocks are considered two)
- Impulse Response blocks** Up to four 1024-point IRs (two per path) or two 2048-point IRs (one per path)
- Looper block** One

To see which models can be added to the current path, press the joystick to open the Model List.


Grayed out items cannot be accommodated and are skipped over - See "[Selecting Blocks/Adjusting Parameters](#)":



## Tips to Optimize DSP

- Each of the Helix device's two primary paths utilizes its own DSP. If all of your blocks are on paths 1A and 1B, you're only using half its horsepower! If you plan on creating tones with two or more amps and more than a handful of effects, expect to use both paths 1 and 2
- Some block types use much more DSP than others, such as amps, cabs, IRs, and pitch shifters. Not surprisingly, the Amp+Cab block uses the most. EQ, Dynamics, Volume/Pan, and Send/Return blocks use relatively little
- Some models may use more DSP than others in the same category. This is especially true with amp models
- Instead of a parallel path with two Amp+Cab blocks or two separate Amps and Cabs, try adding a single Amp block followed by a single Cab > Dual block (mixing two different Cabs can provide some substantial variations)
- The stereo version of an effects block will use roughly twice as much DSP as a mono version of the same block. Likewise, the dual version of a cab block will use roughly twice as much DSP as the single version
- Some model categories have "Simple" blocks, which utilize less DSP than others
- Instead of toggling between two of the same amp or effects blocks (with different settings), use controllers or snapshots to instantly adjust parameters within a single block.

## Block Order and Stereo Imaging

Most of the Helix effects models have both mono and stereo versions. A stereo block displays  after its model name in the inspector. The stereo imaging—or how wide your tone appears with stereo speakers or headphones—is highly dependent on the type of blocks you add and in what order.

Keep the following things in mind when building tones:

- All Amp+Cab, Amp, and Preamp blocks are mono, so any stereo signal sent into these will be collapsed to mono. As such, it's a good idea to add only mono blocks before amps and preamps
- Adding a mono effects block will collapse any preceding stereo blocks on the same path to mono
- If you're only ever connecting Helix to the front of a single guitar amp or PA/FRFR speaker, there may be no need to use stereo models at all (except, of course, for models that are only offered as stereo!)

## What is Variax?

[Line 6 Variax guitars](#) feature special electronics that model the sound of other specific guitars and instruments, as well as allow for instant retuning of each string. Helix and Variax work together in powerful and flexible ways. You can:

- Store Variax model, tuning, and/or volume and tone knob positions with a Helix preset or snapshot and recall them instantly
- Toggle between two Variax models and/or tunings via footswitch or MIDI CC
- Turn the Variax volume and/or tone knobs to remotely control one or more Helix amp and effects parameters. You could almost think of them as EXP 4 and EXP 5
- Split Variax modeled and magnetic signals, process them separately through independent signal paths, and either mix them together or route them to different Helix outputs
- Power the Variax modeling engine via a VDI (CAT-5 or Ethercon) cable, eliminating the need for the removable battery.



# The Blocks

## Input

Each preset can have up to four Input blocks (one or two per path).

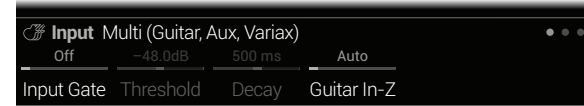


- None** Disables (mutes) the input block. Only available on Path 2.
- Multi** Guitar, Aux, and Variax inputs are all active simultaneously. Normally, you should choose Multi.
- Guitar** Guitar in only.
  - Aux** Aux in only. (10kΩ input for an active-pickup equipped guitar or bass.)
  - Variax** With a [James Tyler® Variax®](#) (JTV) or [Variax® Standard](#) guitar, the "Variax" Input source receives the Model or Magnetic signal, depending on the guitar's Model switch setting.

- Variax Magnetics** Receives only the JTV or Variax Standard's magnetic pickup signal.
  - Mic** Mic in only.
- Return 1, 2, 3, 4, 1/2, 3/4** Returns 1, 2, 3, and 4 can act as additional mono input blocks. Returns 1/2 and 3/4 can act as additional stereo input blocks for processing keyboards, drum machines, or even other modelers. If a Return or FX Loop processing block exists in the preset, the utilized Return input will be non-selectable. See ["Send/Return"](#)
- S/PDIF** S/PDIF digital in only. If a Variax input (or Multi input, which includes Variax) exists on another Input block within the preset, S/PDIF in will be non-selectable.
- USB 3/4, 5/6, 7/8** USB inputs 3/4, 5/6, and 7/8 can all be used for processing tracks from your Mac® or Windows® DAW software. See ["USB Audio"](#)

Helix also receives input from USB 1/2, but it's dedicated for monitoring audio from your computer (or iPad) and bypasses all processing blocks. As such, it's not available as an input block source.

All input blocks have a dedicated noise gate. Threshold and Decay parameters are grayed out unless the Input Gate parameter is turned on:



Input > Multi and Input > Guitar blocks have an additional Guitar In-Z parameter. Helix has an impedance circuit on its Guitar Input that affects tone and feel by loading your guitar's pickups as they would by an effect pedal or amplifier. A lower value will typically result in some high frequency attenuation, lower gain, and an overall "softer" feel. A higher value provides full frequency response, higher gain, and an overall "tighter" feel.

Multi and Variax input blocks have additional pages for Variax parameters:

## James Tyler Variax or Variax Standard

Page	Knob	Parameter	Description
1	<b>Variax Settings</b>		Determines whether Variax settings are applied per preset or globally
2	<b>Variax Model</b>		Selects the Variax model and pickup position setting. When set to "Don't Force," Helix respects the Variax current setting.
3	<b>Variax Vol Knob</b>		Remotely sets the Variax volume knob setting. When set to "Don't Force," Helix respects the current Variax Volume knob position.
4	<b>Variax Tone Knob</b>		Remotely sets the Variax tone knob setting. When set to "Don't Force," Helix respects the current Variax Tone knob position.
5	<b>Lock Variax Controls</b>		When set to "Unlocked," the Variax tone knob, volume knob, and toggle switch remain active. When locked, the Variax knobs and/or switches no longer control the local functions on the guitar. Turning the Variax model knob resets all to "Unlocked."
6	<b>Variax Tuning</b>		When set to "Don't Force," Helix respects the Variax current tuning. When set to "Custom," Helix engages any custom tuning on Page ●●●●.

Page	Knob	Parameter	Description
	1	Variax String 6	
	2	Variax String 5	Choose the amount of half-steps, positive or negative, for which you want to raise or lower the pitch of the selected string. The note labels displayed assume the guitar is tuned to standard pitch (E, A, D, G, B, E), with the A using a 440 Hz reference pitch.
••••	3	Variax String 4	
	4	Variax String 3	
	5	Variax String 2	
	6	Variax String 1	

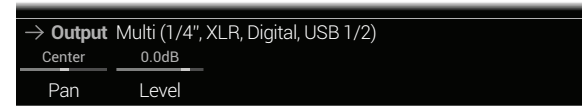
## Output

Each preset can have up to four Output blocks (one or two per path).



- Multi** 1/4", XLR, Digital, and USB 1/2 outputs are all active simultaneously. Normally, you should choose Multi.
- Path 2A, 2B, or 2A+B** These outputs only appear for Path 1 output blocks, and are used to route Path 1 into Path 2.
- 1/4"** 1/4" outs only.
- XLR** XLR outs only.
- Send 1/2, Send 3/4** Send 1/2 and 3/4 can act as additional output blocks.
- Digital S/PDIF, AES/EBU, L6 LINK** Only one digital output can be active at a time; choose S/PDIF or AES/EBU and the desired sample rate in the "[Global Settings > Ins/Outs](#)". The Global Ins/Outs settings are not necessary for L6 LINK - see "[L6 LINK Output](#)" for more info.
- USB 1/2, USB 3/4, USB 5/6** USB 1/2, 3/4, and 5/6 can act as additional output blocks for routing paths to your computer, iPad, or iPhone (with optional Apple Camera Connection Kit). USB 7 and 8 are dedicated for re-amping, and are not available as output block destinations. See "[USB Audio](#)" for details.

All output blocks display Knob 1 (Pan) and Knob 2 (Level):



**SHORTCUT:** Press Knob 1 (Pan) to return Pan to center. Press Knob 2 (Level) to return Level to unity (0.0dB).



**TIP:** Use Knob 2 (Level) to set the path's overall level, which is important to ensure all of your presets maintain a consistent volume throughout your set.

## L6 LINK Output

Alternatively, the digital XLR connector can be used for L6 LINK output (use of a 110Ω XLR cable is recommended). L6 LINK provides easy digital audio connectivity between Helix and Line 6 [StageSource](#) speakers and/or [DT-Series amplifiers](#). Two StageSource speakers or DT amps can also be connected in series via L6 LINK and your stereo Helix signal is intelligently split, with the left channel going to the first StageSource/DT and the right channel to the second. If you have one StageSource/DT connected, the Helix output is collapsed to mono and fed to the StageSource/DT.

Connecting an L6 LINK device to Helix automatically disables S/PDIF out and routes audio out the digital XLR connector - no adjustments of the Global Settings > Ins/Outs > Digital Audio or Sample Rate options are necessary.




**TIP:** With an L6 LINK connection to a DT-Series amp, often the Helix Preamp models are a better choice than Amp or Amp+Cab models. Manually configure the analog power amp options on the DT amp for more sonic possibilities!



**TIP:** It is possible to use Helix to remotely control several parameters on your DT-Series amp (channel select, power amp topology, reverb, etc.) via MIDI. Connect a 5-pin MIDI cable from Helix Rack's MIDI Out to the DT amp's MIDI In and use the Helix "[Command Center](#)" to configure the desired MIDI commands for any preset.

Start by loading the Helix **TEMPLATES > 04D DT25-DT50 Remote** preset since it has several handy DT commands already mapped to Helix switches for you. You can customize this template and create your own sets of controls to add to your Helix presets. Also see the *DT MIDI Implementation Guide* for a complete list of MIDI commands, available from <http://line6.com/support/manuals/>

# Effects

Many Helix effects blocks can be either mono or stereo. Stereo effects display  after the model name.



Select an effects block and turn the joystick to change its model.

## Distortion Models

Model	Subcategories	Based On*
<b>Minotaur</b>	Mono, Stereo	Klon® Centaur
<b>Teemah!</b>	Mono, Stereo	Paul Cochrane Timmy® Overdrive
<b>Compulsive Drive</b>	Mono, Stereo	Fulltone® OCD
<b>Valve Driver</b>	Mono, Stereo	Chandler Tube Driver
<b>Top Secret OD</b>	Mono, Stereo	DOD® OD-250
<b>Scream 808</b>	Mono, Stereo	Ibanez® TS808 Tube Screamer®
<b>Hedgehog D9</b>	Mono, Stereo	MAXON® SD9 Sonic Distortion
<b>Vermin Dist</b>	Mono, Stereo	Pro Co RAT
<b>KWB</b>	Mono, Stereo	Benadrian Kowloon Walled Bunny Distortion
<b>Arbitrator Fuzz</b>	Mono, Stereo	Arbiter® FuzzFace®
<b>Triangle Fuzz</b>	Mono, Stereo	Electro-Harmonix® Big Muff π®
<b>Industrial Fuzz</b>	Mono, Stereo	Z.Vex Fuzz Factory
<b>Tycoctavia Fuzz</b>	Mono, Stereo	Tycobrahe® Octavia
<b>Wringer Fuzz</b>	Mono, Stereo	Garbage's modded BOSS® FZ-2
<b>Megaphone</b>	Mono, Stereo	Megaphone
<b>Bitcrusher</b>	Mono, Stereo	Line 6 Original

## Dynamics Models

Model	Subcategories	Based On*
<b>Deluxe Comp</b>	Mono, Stereo	Line 6 Original
<b>Red Squeeze</b>	Mono, Stereo	MXR® Dyna Comp
<b>LA Studio Comp</b>	Mono, Stereo	Teletronix® LA-2A®
<b>Noise Gate</b>	Mono, Stereo	Line 6 Original
<b>Hard Gate</b>	Mono, Stereo	Line 6 Original

## EQ Models

Model	Subcategories	Based On*
<b>Simple EQ</b>	Mono, Stereo	Line 6 Original
<b>Low Cut/High Cut</b>	Mono, Stereo	Line 6 Original
<b>Parametric</b>	Mono, Stereo	Line 6 Original
<b>10-Band Graphic</b>	Mono, Stereo	MXR® 10-Band Graphic EQ
<b>Cali Q Graphic</b>	Mono, Stereo	MESA/Boogie® Mark IV Graphic EQ

## Modulation Models

Model	Subcategories	Based On*
<b>Optical Trem</b>	Mono, Stereo	Fender® optical tremolo circuit
<b>60s Bias Trem</b>	Mono, Stereo	Vox® AC-15 Tremolo
<b>Tremolo/Autopan</b>	Mono, Stereo	BOSS® PN-2
<b>Harmonic Tremolo</b>	Mono, Stereo	Line 6 Original
<b>Script Mod Phase</b>	Mono, Stereo	MXR® Phase 90
<b>Ubiquitous Vibe</b>	Mono, Stereo	Shin-ei Uni-Vibe®
<b>Deluxe Phaser</b>	Mono, Stereo	Line 6 Original
<b>Gray Flanger</b>	Mono, Stereo	MXR® 117 Flanger
<b>Harmonic Flanger</b>	Mono, Stereo	A/DA Flanger
<b>Courtesan Flange</b>	Mono, Stereo	Electro-Harmonix® Deluxe EM

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Modulation Models		
Model	Subcategories	Based On*
Dynamix Flanger	Mono, Stereo	Line 6 Original
Chorus	Mono, Stereo	Line 6 Original
70s Chorus	Mono, Stereo	BOSS® CE-1
Trinity Chorus	Stereo	DyTronics Tri-Stereo Chorus
Bubble Vibrato	Mono, Stereo	BOSS® VB-2 Vibrato
Vibe Rotary	Stereo	Fender® Vibratone
122 Rotary	Stereo	Leslie® 122
145 Rotary	Stereo	Leslie® 145
AM Ring Mod	Mono, Stereo	Line 6 Original
Pitch Ring Mod	Stereo	Line 6 Original

Delay Models		
Model	Subcategories	Based On*
Simple Delay	Mono, Stereo	Line 6 Original
Mod Chorus Echo	Mono, Stereo	Line 6 Original
Dual Delay	Stereo	Line 6 Original
Multitap 4	Stereo	Line 6 Original
Multitap 6	Stereo	Line 6 Original
Ping Pong	Stereo	Line 6 Original
Sweep Echo	Mono, Stereo	Line 6 Original
Ducked Delay	Mono, Stereo	TC Electronic® 2290
Reverse Delay	Mono, Stereo	Line 6 Original
Vintage Digital	Mono, Stereo	Line 6 Original
Transistor Tape	Mono, Stereo	Maestro® Echoplex EP-3
Harmony Delay	Stereo	Line 6 Original
Bucket Brigade	Mono, Stereo	BOSS® DM-2
Adriatic Delay	Mono, Stereo	BOSS® DM-2 w/ Adrian Mod
Elephant Man	Mono, Stereo	Electro-Harmonix® Deluxe Memory Man

Reverb Models		
Model	Subcategory	Based On*
Plate	Stereo	Line 6 Original
Room	Stereo	Line 6 Original
Chamber	Stereo	Line 6 Original
Hall	Stereo	Line 6 Original
Echo	Stereo	Line 6 Original
Tile	Stereo	Line 6 Original
Cave	Stereo	Line 6 Original
Ducking	Stereo	Line 6 Original
Octo	Stereo	Line 6 Original
63 Spring	Stereo	Line 6 Original
Spring	Stereo	Line 6 Original
Particle Verb	Stereo	Line 6 Original

Pitch/Synth Models		
Model	Subcategories	Based On*
Pitch Wham	Mono, Stereo	Digitech Whammy®
Twin Harmony	Mono, Stereo	Eventide® H3000
Simple Pitch	Mono, Stereo	Line 6 Original
Dual Pitch	Mono, Stereo	Line 6 Original
3 OSC Synth	Stereo	Line 6 Original

Filter Models		
Model	Subcategories	Based On*
Mutant Filter	Mono, Stereo	Musitronics® Mu-Tron® III
Mystery Filter	Mono, Stereo	Korg® A3
Autofilter	Mono, Stereo	Line 6 Original

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## Wah Models

Model	Subcategories	Based On*
UK Wah 846	Mono, Stereo	Vox® V846
Teardrop 310	Mono, Stereo	Dunlop® Crybaby® Fasel model 310
Fassel	Mono, Stereo	Dunlop® Cry Baby® Super
Weeper	Mono, Stereo	Arbiter® Cry Baby
Chrome	Mono, Stereo	Vox® V847
Chrome Custom	Mono, Stereo	Modded Vox® V847
Throaty	Mono, Stereo	RMC Real McCoy 1
Vetta Wah	Mono, Stereo	Line 6 Original
Colorful	Mono, Stereo	Colorsound® Wah-fuzz
Conductor	Mono, Stereo	Maestro® Boomerang

## Volume/Pan Models

Model	Subcategories	Based On*
Volume Pedal	Mono, Stereo	Line 6 Original
Gain	Mono, Stereo	Line 6 Original
Pan	Stereo	Line 6 Original

## Common FX Settings

Parameter	Description
Drive	Adjusts the amount of overdrive, distortion, or fuzz.
Bass	Adjusts the bass level.
Mid	Adjusts the midrange level.
Treble	Adjusts the treble level.
Speed	Adjusts the speed of the effect, with higher settings providing faster rates. <b>Press the knob to toggle between Hz and note values.</b> Choosing a Hz value provides a specific modulation speed in cycles per second; choosing a note value provides a time based on the current tempo. Not all Speed parameters can be synced to note values, as they may be non-linear and highly interactive.

Parameter	Description
Rate	Adjusts the rate of the effect, with higher settings providing faster rates. <b>Press the knob to toggle between numeric and note values.</b> Not all Rate parameters can be synced to note values, as they may be non-linear and highly interactive.
Time	Adjusts the delay/repeat time, with higher settings providing longer delays. <b>Press the knob to toggle between ms and note values.</b> Choosing a ms value provides a specific time in milliseconds; choosing a Note Division value provides a time based on the current tempo. With a note division value, this parameter's value is retained when changing models.
Depth	Adjusts the intensity of the modulation. Higher settings result in more extreme pitch bending, wobble, or throb, depending on the effect.
Feedback	Adjusts the amount of delayed signal fed back into the effect. Higher settings can provide more dramatic textures.
Decay	Sets the length of time the reverb effect sustains.
Predelay	Determines the time before the reverb effect is heard.
Headroom	Some mod and delay pedals' internal signal paths exhibit a bit of grit, especially when placed after a high-gain amp block. Negative values increase the perceived amount of grit; positive values clean things up a bit. At 0dB, the model behaves like the original pedal.
Low Cut	Filters a portion of the block's bass and/or treble frequencies, which can help remove rumble and/or high-end harshness.
High Cut	
Mix	Blends the effected "wet" signal vs. the "dry" signal passed through the block. When set to 0%, the path bypasses the effect completely. When set to 100%, the entire path is fed through the effect, and no dry thru signal is heard.
Level	Adjusts the overall output level of the effects block. Be careful not to boost this parameter too high on multiple blocks, as digital clipping could occur. You should typically leave this at 0.0dB for most blocks. Where the original pedal's level or volume knob behavior doesn't really apply to dB values, 0.0-10 may be used.
Trails	<i>Trails Off:</i> Any delay repeats or reverb decays are instantly muted when the block is bypassed. <i>Trails On:</i> Any delay repeats or reverb decays continue to decay naturally when the block is bypassed or a different snapshot is selected.

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# Amp+Cab

Amp+Cab blocks are convenient in that when you select an Amp model, its matching Cab model is automatically loaded.





To change the amp model in an Amp+Cab block, press <PAGE> until the amp icon is white and turn the joystick. To change the cab model, press PAGE> until the cab icon is white and turn the joystick.



The first page of Amp+Cab parameters is called the *tonestack*, and represents the knobs you would see on the real amp's panel:



**SHORTCUT:** Press  to quickly select the Amp+Cab, Amp, or Preamp block and access its tonestack parameters (Gain, Bass, Mid, Treble, etc.). If a preset has more than one of these blocks, press  repeatedly to cycle through all tonestacks.

## Amp Models

Model	Subcategory	Based On*
WhoWatt 100	Guitar	Hiwatt® DR-103 Brill
Soup Pro	Guitar	Supro® S6616
Stone Age 185	Guitar	Gibson® EH-185
Tweed Blues Nrm	Guitar	Fender® Bassman® (normal channel)

## Amp Models

Model	Subcategory	Based On*
Tweed Blues Brt	Guitar	Fender® Bassman® (bright channel)
US Small Tweed	Guitar	Fender® Champ®
US Deluxe Nrm	Guitar	Fender® Deluxe Reverb® (normal channel)
US Deluxe Vib	Guitar	Fender® Deluxe Reverb® (vibrato channel)
US Double Nrm	Guitar	Fender® Twin Reverb® (normal channel)
US Double Vib	Guitar	Fender® Twin Reverb® (vibrato channel)
Mail Order Twin	Guitar	Silvertone® 1484
Divided Duo	Guitar	÷13 JRT 9/15
Interstate Zed	Guitar	Dr Z® Route 66
Jazz Rivet 120	Guitar	Roland® JC-120 Jazz Chorus
Essex A15	Guitar	Vox® AC-15
Essex A30	Guitar	Vox® AC-30 with top boost
A30 Fawn Nrm	Guitar	Vox® AC-30 Fawn (normal channel)
A30 Fawn Brt	Guitar	Vox® AC-30 Fawn (bright channel)
Matchstick Ch1	Guitar	Matchless® DC30 (channel 1)
Matchstick Ch2	Guitar	Matchless® DC30 (channel 2)
Matchstick Jump	Guitar	Matchless® DC30 (jumped)
Mandarin 80	Guitar	Orange® OR80
Brit J45 Nrm	Guitar	Marshall® JTM-45 (normal channel)
Brit J45 Brt	Guitar	Marshall® JTM-45 (bright channel)
Brit Plexi Nrm	Guitar	Marshall® Super Lead 100 (normal channel)
Brit Plexi Brt	Guitar	Marshall® Super Lead 100 (bright channel)
Brit Plexi Jump	Guitar	Marshall® Super Lead 100 (jumped)
Brit P75 Nrm	Guitar	Park® 75 (normal channel)
Brit P75 Brt	Guitar	Park® 75 (bright channel)
Brit 2204	Guitar	Marshall® JCM-800

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Amp Models		
Model	Subcategory	Based On*
German Mahadeva	Guitar	Bogner® Shiva
German Ubersonic	Guitar	Bogner® Überschall®
Cali IV Rhythm 1	Guitar	MESA/Boogie® Mark IV (channel I)
Cali IV Rhythm 2	Guitar	MESA/Boogie® Mark IV (channel II)
Cali IV Lead	Guitar	MESA/Boogie® Mark IV (lead channel)
Cali Rectifire	Guitar	MESA/Boogie® Dual Rectifier®
ANGL Meteor	Guitar	ENGL® Fireball 100
Solo Lead Clean	Guitar	Soldano SLO-100 (clean channel)
Solo Lead Crunch	Guitar	Soldano SLO-100 (crunch channel)
Solo Lead OD	Guitar	Soldano SLO-100 (overdrive channel)
PV Panama	Guitar	Peavey® 5150®
Line 6 Elektrik	Guitar	Line 6 Original
Line 6 Doom	Guitar	Line 6 Original
Line 6 Epic	Guitar	Line 6 Original
Line 6 2204 Mod	Guitar	Line 6 Original
Line 6 Fatality	Guitar	Line 6 Original
Tuck n' Go	Bass	Ampeg® B-15NF Portaflex®
SV Beast Nrm	Bass	Ampeg® SVT® (normal channel)
SV Beast Brt	Bass	Ampeg® SVT® (bright channel)
Cali Bass	Bass	MESA/Boogie® M9 Carbine
Cali 400 Ch1	Bass	MESA/Boogie® Bass 400+ (channel 1)
Cali 400 Ch2	Bass	MESA/Boogie® Bass 400+ (channel 2)
G Cougar 800	Bass	Gallien-Krueger® GK 800RB

Tonestack and deeper amp parameters found on subsequent pages may differ depending on the amp model selected.

## Common Amp Settings

Parameter	Description
<b>Master</b>	Adjusts the amount of power amp distortion. This parameter is highly interactive with all other power amp parameters—the lower the Master is set, the less effect the other controls will have.
<b>Sag</b>	Lower Sag values offer a "tighter" responsiveness for metal and djent playing; higher values provide more touch dynamics & sustain for blues and classic rock riffs.
<b>Hum</b>	Controls how much heater hum and AC ripple interacts with your tone.
<b>Ripple</b>	At higher settings, things get freaky.
<b>Bias</b>	Changes the Bias of the power tubes. Lower values achieve a "colder" Class AB biasing. At maximum, the amp is operating in Class A.
<b>Bias X</b>	Determines how the power amp tubes' voicing reacts when pushed hard. Set low for a tighter feel. Set high for more tube compression. This parameter is highly reactive with the Drive and Master settings.

## Amp

Amp blocks are identical to Amp+Cab blocks, except they contain no matched cab model.



## Preamp

We've also included a complete set of Preamp versions of each Amp model, which provide the tone of just the preamp stage of the amp—recommended when feeding Helix into an external amplifier (either via 1/4" to your traditional amp or via L6 LINK to a Line 6 DT25 or DT50).



Preamp blocks require less DSP than a full Amp block.

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# Cab

There are two subcategories of Cab blocks—Single and Dual. Not surprisingly, dual Cabs take twice as much DSP as single Cabs.



To change the first cab model in a Cab > Dual block, press <PAGE until the left cab icon is white and turn the joystick. To change the second cab, press PAGE> until the right cab icon is white and turn the joystick.



Cab Models		
Model	Subcategories	Based On*
Soup Pro Ellipse	Single, Dual	1 x 6x9" Supro® S6616
1x8 Small Tweed	Single, Dual	1x8" Fender® Champ
1x12 Field Coil	Single, Dual	1x12" Gibson® EH185
1x12 US Deluxe	Single, Dual	1x12" Fender® Deluxe Oxford
1x12 Celest 12H	Single, Dual	1x12" ÷13 JRT 9/15 G12 H30
1x12 Blue Bell	Single, Dual	1x12" Vox® AC-15 Blue
1x12 Lead 80	Single, Dual	1x12" Bogner® Shiva CL80
2x12 Double C12N	Single, Dual	2x12" Fender® Twin C12N
2x12 Mail C12Q	Single, Dual	2x12" Silvertone® 1484
2x12 Interstate	Single, Dual	2x12" Dr Z® Z Best V30
2x12 Jazz Rivet	Single, Dual	2x12" Roland® JC-120

Cab Models		
Model	Subcategories	Based On*
2x12 Silver Bell	Single, Dual	2x12" Vox® AC-30TB Silver
2x12 Blue Bell	Single, Dual	2x12" Vox® AC-30 Fawn Blue
4x10 Tweed P10R	Single, Dual	4x10" Fender® Bassman® P10R
4x12 WhoWatt 100	Single, Dual	4x12" Hiwatt® AP Fane®
4x12 Mandarin EM	Single, Dual	4x12" Orange® Eminence
4x12 Greenback25	Single, Dual	4x12" Marshall® Basketweave G12 M25
4x12 Greenback20	Single, Dual	4x12" Marshall® Basketweave G12 M20
4x12 Blackback30	Single, Dual	4x12" Park® 75 G12 H30
4x12 1960 T75	Single, Dual	4x12" Marshall® 1960 AT75
4x12 Uber V30	Single, Dual	4x12" Bogner® Uberkab V30
4x12 Uber T75	Single, Dual	4x12" Bogner® Uberkab T75
4x12 Cali V30	Single, Dual	4x12" MESA/Boogie® 4FB V30
4x12 XXL V30	Single, Dual	4x12" ENGL® XXL V30
4x12 SoloLead EM	Single, Dual	4x12" Soldano
1x15 Tuck n' Go	Single, Dual	1x15" Ampeg® B-15
2x15 Brute	Single, Dual	2x15" MESA/Boogie® 2x15 EV
4x10 Rhino	Single, Dual	4x10" Ampeg® SVT® 410HLF
6x10 Cali Power	Single, Dual	6x10" MESA/Boogie® Power House
8x10 SV Beast	Single, Dual	8x10" Ampeg® SVT®

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Mic Models	
Model	Based On*
57 Dynamic	Shure® SM57
409 Dynamic	Sennheiser® MD 409
421 Dynamic	Sennheiser® MD 421-U
30 Dynamic	Heil Sound® PR 30
20 Dynamic	Electro-Voice® RE20
121 Ribbon	Royer® R-121
160 Ribbon	Beyerdynamic® M 160
4038 Ribbon	Coles 4038
414 Cond	AKG® C414 TLII
84 Cond	Neumann® KM84
67 Cond	Neumann® U67
87 Cond	Neumann® U87
47 Cond	Neumann® U47
112 Dynamic	AKG® D112
12 Dynamic	AKG® D12
7 Dynamic	Shure® SM7

## Cab Settings

Knob	Parameter	Description
1	Mic	Selects one of the 16 available mic models.
2	Distance	Sets the distance (1 inch to 12 inches) between the mic and the speaker grille.
3	Low Cut	Filters a portion of the cab's bass and/or treble frequencies, which can help remove rumble and/or high-end harshness.
4	High Cut	
5	EarlyReflc	Sets the amount of "early reflections." Higher values add more reflective room sound to your Amp tone.
6	Level	Adjusts the overall output level of the Cab.

## Impulse Response (IR)

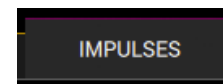
Impulse Responses are mathematical functions representing the sonic measurements of specific audio systems (for Helix, speaker cabinet and microphone combinations). Helix can load and store up to 128 custom or third-party IRs at a time.



### Loading Custom IRs

Loading custom impulse responses requires connecting to the *Helix* application in your Mac® or Windows® computer. The *Helix* application is available as a free download from [line6.com/software](http://line6.com/software).

1. **Connect Helix to your computer via USB and open the *Helix* application.**
2. **Click the Impulses tab.**



3. **Drag one or more IR files from the desktop or any Finder window directly into the Helix app's Impulses list.**

The *Helix* app updates the Helix hardware's IR list automatically. Helix can load and store up to 128 IRs at a time. 48kHz, 16-bit, mono, .WAV type IRs of up to 2,048 samples are natively supported. But the *Helix* app allows you to import IR .WAV files of different sample rate, bit depth, length and stereo format, and the app will convert these attributes automatically before sending to the Helix hardware.

- Go to the *Helix* app's Preferences to set the preferred behavior for importing Stereo WAV IRs - there you can choose to import the left or right channel data of the file, or a mix of both channels for the Helix (mono) IR.
- The imported IR is automatically shortened (or lengthened) to 2,048 samples. You may optionally choose a 1,024-sample version from the model list to save DSP, which fades out the IR halfway through.

**! IMPORTANT!** IR blocks reference an IR number, not the actual IR file. For example, if you happen to replace or delete "IR 12" from the *Helix* application, it will affect any presets containing IR blocks with "IR 12" selected.

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## Impulse Response Settings

Knob	Parameter	Description
1	IR Select	Selects one of the 128 available IR locations. If a location contains an IR, the inspector header displays its name; otherwise, it reads "<EMPTY>."
2	Low Cut	Filters a portion of the IR's bass and/or treble frequencies, which can help remove rumble and/or high-end harshness.
3	High Cut	
4	Mix	Blends the IR signal with the dry signal passed through the IR block. When set to 0%, the path bypasses the IR completely. When set to 100%, the entire path is fed through the IR, and no dry signal is heard.
5	Level	Adjusts the overall output level of the IR block.

## Send/Return

Each of the Helix four sends and returns can be used independently, or used together as an FX loop.



FX loops let you dynamically insert your favorite external stompboxes (or rack effects) into any location in your tone.

**NOTE:** Each send and return pair can be set for instrument (for inserting stompboxes) or line-level operation. See ["Global Settings > Ins/Outs"](#)

**NOTE:** Each return can be used only once in a preset. For example, if you add a Return 1 block (or assign one of the input blocks to Return 1), Return 1/2, FX Loop 1, and FX Loop 1/2 items will all appear grayed out in the model list, as they also utilize Return 1.

## Send Settings

Knob	Parameter	Description
1	Send	Adjusts the level sent to your external devices.
2	Dry Thru	Adjusts the level of the signal passed through the Send block, independent of the Knob 1 (Send) level. Normally, this should be set to 0.0dB.

## Return Settings

Knob	Parameter	Description
1	Return	Adjusts the level received at the Return jack.
2	Mix	Blends the Return signal vs. the dry signal passed through the Return block. When set to 0%, the path bypasses the Return completely. When set to 100%, the entire signal is fed from the Return, and no dry thru signal is heard.

## FX Loop Settings

Knob	Parameter	Description
1	Send	Adjusts the level sent to your external device.
2	Return	Adjusts the level received at the Return jack.
3	Mix	Blends the FX loop signal vs. the dry signal passed through the FX Loop block. When set to 0%, the path bypasses the FX loop completely. When set to 100%, the entire path is fed through the FX loop, and no dry thru signal is heard.
4	Trails	<i>Trails Off:</i> An external stompbox would be instantly muted when the FX Loop block is bypassed. <i>Trails On:</i> An external delay or reverb stompbox would continue to decay naturally when the FX Loop block is bypassed or a different snapshot is selected.

# Looper

Helix can add one mono or stereo Looper block per preset.



The Looper can exist anywhere on either Path 1 or Path 2. Also see "[Looper Foot-switch Mode](#)"

## Looper Settings

Knob	Parameter	Description
1	<b>Playback</b>	Adjusts looper playback level. You may find it useful to turn this down a bit so your live guitar can be slightly louder.
2	<b>Overdub</b>	<i>Relatively</i> sets the level of your loop while overdubbing. For example, if your Overdub Level is set to 90%, each time your loop repeats, its volume will be reduced by 10%, sounding quieter and quieter with each overdub pass.
3	<b>Low Cut</b>	Filters a portion of the loop's bass and/or treble frequencies, which can improve the mix with your live guitar.
4	<b>High Cut</b>	

# Split

A Split block appears any time a parallel path is created, but is visible only when selected:



Helix has three different types of Split blocks:

- Y** Both the left and right sides of the signal are sent evenly to Paths A (upper) and B (lower). By default, a Split > Y appears any time a parallel path is created. There are no settings to adjust.
- A/B** The signal can be sent in different amounts to Paths A (upper) and B (lower).
- Crossover** Treble frequencies are sent to Path A (upper) and bass frequencies are sent to Path B (lower).

## Split > A/B Settings

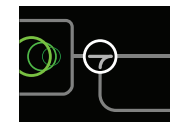
Knob	Parameter	Description
1	<b>Route To</b>	Determines the amount of the signal sent to Path A vs. Path B. <b>Press the knob to set to Even Split.</b>

## Split > Crossover Settings

Knob	Parameter	Description
1	<b>Frequency</b>	Any signal above this frequency is sent to Path A (upper); any signal below this frequency is sent to Path B (lower).
2	<b>Reverse</b>	When on, reverses the path assignments (any signal above the crossover frequency is sent to Path B, any signal below the crossover frequency is sent to Path A).

# Merge

A Merge > Mixer block appears any time a parallel path is created, but is visible only when selected:



Knob	Parameter	Description
1	<b>A Level</b>	Adjusts the output level of Path A (upper).
2	<b>A Pan</b>	Adjusts the left/right stereo balance of Path A.
3	<b>B Level</b>	Adjusts the output level of Path B (lower).
4	<b>B Pan</b>	Adjusts the left/right stereo balance of Path B.
5	<b>B Polarity</b>	Inverts the polarity of Path B. Typically, this should be set to "Normal."
6	<b>Level</b>	Adjusts the overall output level of the Merge block.

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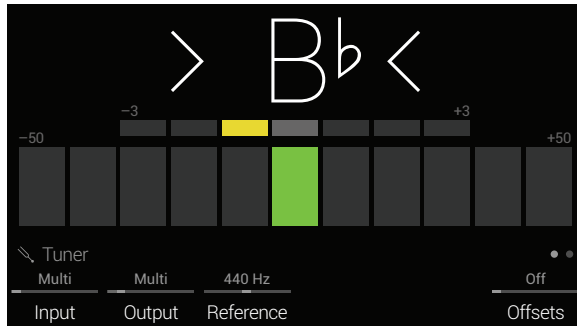
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# Tuner

1. Hold the TAP footswitch until the Tuner screen appears:



2. Pluck an individual string on your guitar.

When a box left of center is lit red, your string is flat. When a box right of center is lit red, your string is sharp. When the center box on the lower row is lit green, the top row of smaller bars can be used for more precision. When both arrows are illuminated, your string is perfectly in tune.

3. To exit the Tuner, step on any footswitch.

All tuner settings are global.

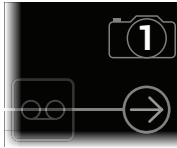
**TIP:** If you have a favorite pedal or rack tuner and wish to use it instead of the Helix tuner, connect Send 1, 2, 3, or 4 to your tuner's input and turn Knob 2 (Tuner Out) to select that Send. This way, every time you hold the TAP footswitch, Helix will automatically route the signal to your favorite tuner.

## Tuner Settings

Page	Knob	Parameter	Description
	1	<b>Tuner In</b>	Determines which input the tuner will listen to. Normally, you should choose "Multi," which listens to the Guitar, Aux, and Variax inputs simultaneously.
● ●	2	<b>Tuner Out</b>	Determines the active output while the Tuner screen is active. If you prefer to hear nothing while tuning, choose "Mute." Normally, you should choose "Multi," which routes the input to 1/4", XLR, Digital, and USB 1/2.
	3	<b>Reference</b>	If you'd like to tune to a reference other than standard 440 Hz, select from 425 to 455 Hz.
	6	<b>Offsets</b>	Enables the Tuner offsets displayed on Page ● ●.
	1	<b>String 6 Offset</b>	
	2	<b>String 5 Offset</b>	
● ●	3	<b>String 4 Offset</b>	Some guitarists feel that tuning certain strings slightly sharp or flat in relation to concert tuning can improve intonation. String offsets calibrate the tuner so that these slightly out-of-tune pitches appear as in tune. String 6 is low E and String 1 is high E. Tuning offsets won't be applied unless Knob 6 (Offsets) on Page ● ● is turned on.
	4	<b>String 3 Offset</b>	
	5	<b>String 2 Offset</b>	
	6	<b>String 1 Offset</b>	

# Snapshots

With Helix firmware 2.0 or higher, you'll see a camera icon in the upper right corner of the screen. The number indicates the current snapshot.



## Why should I care about snapshots?

To be honest, maybe you shouldn't. Ask yourself these questions:

- Hey self, when performing live, does the small gap when switching tones drive me nuts?
- If my delay repeats and reverb trails don't seamlessly spill over when switching tones, does it drive me nuts?
- Do I secretly wish I were an octopus, so I can constantly change amp and effects settings throughout a song?

If you answered "M'eh" or "Huh?," stop reading this now, go play guitar, completely ignore the camera icon, and you'll never have to worry about snapshots again. Seriously. However, if you answered "Yes!" to any of these questions, keep reading.

## Okay, I'm still reading

There's always going to be a small audible gap when switching presets in any box with the Helix device's level of dynamic model allocation and routing complexity; that's just how advanced DSP works. However, snapshots allow for a surprising amount of tonal control from within the same preset, and every change happens instantly and seamlessly.

Similar to the snapshots feature in some high end digital mixers, each of the Helix device's eight snapshots stores and recalls the state of certain elements in the current preset, including:

- **Block Bypass**—The bypass (on/off) state of all processing blocks (except Looper), independent of any footswitch assignments. Also see "[Snapshots > Block Bypass](#)"
- **Parameter Control**—The values of any parameters assigned to controllers (up to 64 per preset). Also see "[Snapshots > Parameter Control](#)"
- **Command Center**—The values of any instant MIDI CC, Bank/Prog, MMC, and CV Out messages, plus the state (dim or lit) of any CC Toggle, CV Toggle, and Ext Amp messages. Also see "[Command Center](#)"

- **Tempo**—The current system tempo, if "[Global Settings > MIDI/Tempo](#)" > Tempo Select is set to "Per Snapshot." (By default, it's set to "Per Preset")

Depending on how you set them up, snapshots can act as **eight variations of the same tone, eight drastically different tones, or any combination thereof—all within the same preset.** In many cases, a single preset's snapshots may accommodate all the various tones required for a song.

## Snapshots > Block Bypass

Snapshots store and recall the current bypass (on/off) state for all processing blocks. For example, **Snapshot 1—INTRO** could have Distortion 1, Amp 1, Cab, Mod 1, and Delay 1 on:



**Snapshot 2—VERSE** could have Dynamics, Distortion 2, Filter, FX Loop 1, Amp 2, Cab, Delay 2, and Reverb on:



**Snapshot 3—BRIDGE** could have Dynamics, FX Loop 2, Amp 2, IR, EQ, Mod 2, and Delay 2 on:



**Snapshot 4—CHORUS** could have everything on:



And **Snapshot 5—INTERLUDE** could just be Amp 1 and the IR:



Note that all snapshots in a particular preset share the same models; you cannot, for example, add a US Deluxe Amp block in Snapshot 1 and switch its model to Essex A30 in Snapshot 2. However, if Helix has enough available DSP, you can load both amps into the same preset and snapshots can enable neither, one, or both of them.

**! IMPORTANT!** Snapshots make it easy for multiple blocks assigned to the same footswitch to end up in unexpected states. For example, if FS2 toggles between Delay (ON) and Reverb (OFF) blocks and a snapshot turns the Reverb on, FS2 will suddenly turn both blocks on and off together.

See "[Using Snapshots](#)" for more information.

# Snapshots > Parameter Control

In addition, parameters can be set to jump to specific values with each snapshot.

Here's an example where seven parameters (out of a possible 64) are updated instantly with each snapshot:

Snapshot	Variac Model	Amp Gain	Delay Mix	Split A/B	Pitch	IR Select	Output Level
1 INTRO	Spank-1	4.5	35%	Path A 100	0	#27	-7.2dB
2 VERSE	Spank-1	4.5	35%	Path A 100	+5	#27	0.0dB
3 BRIDGE	Lester-5	5.2	43%	Path B 100	+3	#103	+0.8dB
4 CHORUS	Lester-5	4.5	50%	Path B 100	0	#103	+1.5dB
5 INTERLUDE	Spank-1	3.9	8%	Even Split	+5	#27	0.0dB
6 SOLO	Lester-5	8.7	72%	Path B 100	+12	#103	+2.6dB
7 BREAKDOWN	Acous-3	2.0	46%	Path B 47	-12	#12	0.0dB
8 OUTRO	Spank-1	4.5	35%	Path A 100	0	#41	-3.6dB

In the table above, we see that when switching from **Snapshot 2—VERSE** to **Snapshot 3—BRIDGE**:

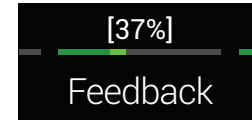
- The connected Variac guitar switches from the Spank-1 guitar model to the Lester-5 guitar model
- The Amp block's gain increases from 4.5 to 5.2
- The Delay block's Mix increases from 35% to 43%
- The Split block routes your guitar from Path A to Path B
- The Pitch block's Interval lowers from +5 to +3 semitones
- The IR changes from #27 to #103
- The Output block's Level increases from 0.0dB to +0.8dB

If you want a parameter to be automatically updated with each snapshot, a controller (such as the Snapshots controller) must first be assigned to it.

## Quick Assigning the Snapshots Controller

To adjust a parameter **AND** have it automatically update per snapshot, **press and turn** the knob.

The parameter's value appears white and in brackets, indicating a controller's assigned to it—in this case, the Snapshots controller:



To adjust a parameter **WITHOUT** it automatically updating per snapshot, just turn the knob like you normally would.

As long as a parameter is not assigned to any controller, its value is maintained across snapshots.



**SHORTCUT:** Hold **BYPASS** and press a parameter knob to quickly remove any controller assignment (including the Snapshots controller). The value appears without brackets, indicating no controller is assigned to it.

See "[Using Snapshots](#)" for more information.

## Manually Assigning the Snapshots Controller

1. From the Home screen, press and hold the knob for the parameter you want to update with each snapshot.

Helix jumps to the Controller Assign page and displays your parameter above Knob 1 (Parameter).

2. Turn Knob 2 (Controller) to select "Snapshots."

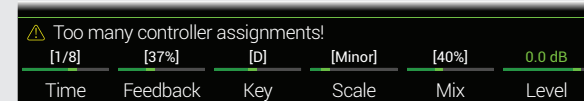


**NOTE:** Actually, it doesn't matter which controller you assign the parameter to, as all controller-assigned parameters automatically update with each snapshot. The exception is any parameters controlled by EXP Pedal 1, 2, or 3 (such as Volume, Wah, and Pitch Wham), which are only updated per snapshot if "[Global Settings > EXP Pedals](#)" > EXP 1/2/3 Pedal Position is set to "Per Snapshot."

3. Press  to return to the Home screen.



**NOTE:** Each preset can have up to 64 controller assignments, including parameters controlled by Snapshots. If you attempt to add a 65th, "Too many controller assignments!" appears in the header:



In this case, you must clear some controllers to free up assignments. See "[Clearing a Block's Controller Assignment\(s\)](#)" or "[Clearing All Controller Assignments](#)"

## Snapshots > Command Center

Snapshots also store and recall the following MIDI, CV, and Ext Amp messages sent to external devices from the Command Center:

- The value of any Instant ⚡ MIDI CC, Bank/Prog, MMC, and CV Out messages
- The state (dim value or lit value) of any CC Toggle or CV Toggle messages assigned to footswitches
- The state (dim or lit ) of any Ext Amp messages assigned to footswitches

For example, say you have a MIDI-controllable reverb pedal connected to the Helix device's MIDI OUT, an external guitar amp connected to the EXT AMP jack, and DAW software connected via USB.

Snapshot	External Reverb Type (Instant CC)	External Reverb Mix (CC Toggle)	Amp Channel (Ext Amp)	DAW Control (Instant MMC)
1 INTRO	Swell	50%	1	Play
2 VERSE	Swell	50%	1	Play
3 BRIDGE	Shimmer	40%	2	Play
4 CHORUS	Shimmer	40%	2	Play
5 INTERLUDE	Bloom	50%	1	Play
6 SOLO	Shimmer	40%	2	Play
7 BREAKDOWN	Bloom	40%	1	Play
8 OUTRO	Swell	50%	2	Stop

In the table above, we see that when switching from **Snapshot 7—BREAKDOWN** to **Snapshot 8—OUTRO**:

- The external reverb pedal's effect type switches from Bloom to Swell
- The external reverb pedal's mix increases from 40% to 50%
- The external amp switches from Channel 1 to Channel 2
- The connected DAW software's playback stops

**NOTE:** A Command Center message is only transmitted if its value changes. In the table above, Helix is smart enough to not transmit duplicate MMC > Play messages for every snapshot; it will, however, transmit MMC with Snapshot 8, because its value changes from Play to Stop.

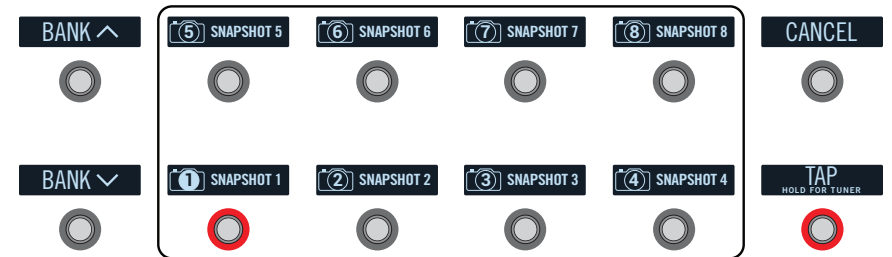
For more information, see "[Command Center](#)".

## Using Snapshots

Okay, sick of reading and ready to jump into snapshots? Here we go...

### 1. Press **BANK ^** and **BANK v** simultaneously to enter Snapshot footswitch mode.

The middle eight switches flash, indicating a snapshot is ready to be selected. The current snapshot's footswitch lights red and its camera lens appears inverted.



### 2. Press one of the eight snapshot switches to select a different snapshot.

**NOTE:** If you don't want Snapshot footswitches to disappear after selecting one, set "[Global Settings > Footswitches](#)" > Knob 4 (Snapshot Mode Switches) to "Manual Return." In this case, Helix stays in Snapshot footswitch mode until you press FS6 (CANCEL).

Alternatively, **press the PRESETS knob and turn Knob 5 (Select Snapshot).**

**NOTE:** If you select a snapshot that hasn't yet been altered, it appears the same as the snapshot you came from. As soon as you alter a new snapshot (say, by enabling or bypassing an amp or effect block), the snapshot becomes "active" and remembers any changes.

### 3. Adjust the preset by doing one or more of the following:

- Turn several blocks on or off by pressing stomp mode footswitches and/or the BYPASS button
- Push-turn a few knobs to automatically assign their parameters to the Snapshots controller (their values appear white and in brackets)
- On the Command Center page, adjust the values of any Instant ⚡ messages or press a footswitch assigned to CC Toggle, CV Toggle, or Ext Amp

### 4. Switch back to the snapshot you started with.

Helix instantly and seamlessly returns to its previous state.

**NOTE:** If you've changed "[Global Settings > Preferences](#)" > Snapshot Edits to "Discard," you must save the preset before selecting a different snapshot; otherwise any edits will be discarded!

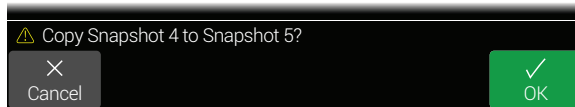
## Copying/Pasting a Snapshot

Instead of creating a new snapshot from scratch, you may want to copy an existing one to another snapshot location and tweak just a few things. There are actually two ways to do this:

### Quick Copy/Paste Snapshot from Footswitches

1. Press **BANK ^** and **BANK v** simultaneously to enter Snapshot footswitch mode.
2. While touch-holding the footswitch for the snapshot you want to copy, briefly touch and release the footswitch for the snapshot you want to overwrite.

A dialog panel appears:

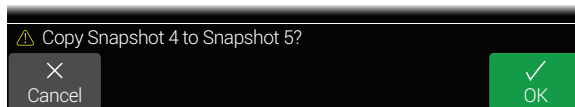


3. Press **Knob 6 (OK)**.

### Copying/Pasting a Snapshot from the Front Panel

1. Press **PRESETS** to open the Setlist menu and turn **Knob 5 (Select Snapshot)** to select the snapshot you want to copy.
2. Press **ACTION** and then **Knob 1 (Copy Snapshot)**.  
Helix returns to the Setlist menu.
3. Turn **Knob 5 (Select Snapshot)** to choose the snapshot you want to overwrite.
4. Press **ACTION** and then **Knob 2 (Paste Snapshot)**.

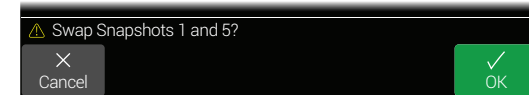
A dialog panel appears:



5. Press **Knob 6 (OK)**.

## Swapping Snapshots

1. Touch (but don't press) the two snapshot switches you want to swap until the following dialog appears:



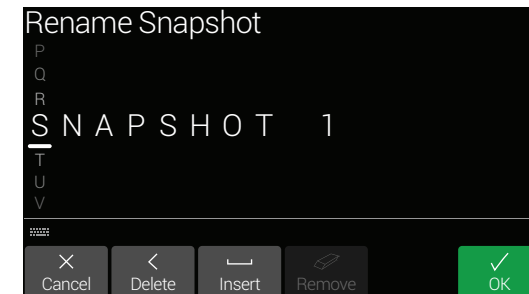
2. Press **Knob 6 (OK)**.

## Renaming a Snapshot

Instead of having to remember the difference between "SNAPSHOT 1" and "SNAPSHOT 2," it's helpful to rename your snapshots something descriptive, such as "VERSE," "BIG SOLO," or "D. IGLOO."

1. Press **PRESETS** to open the Setlist menu.
2. Press **Knob 6 (Rename Snapshot)**.

The Rename Snapshot screen appears:



Move the joystick left or right to move the cursor. Snapshot names are limited to 10 characters.

Turn the joystick (or move it up/down) to change the selected character.

Press **Knob 2 (Delete)** to delete the selected character and shift all following characters to the left.

Press **Knob 3 (Insert)** to insert a space and shift all following characters to the right.



**SHORTCUT:** Press the joystick to cycle through A, a, 0, and [SPACE].

Press **Knob 4 (Remove)** to remove the custom name. Remove is grayed out until a custom name is applied.


3. Press **Knob 6 (OK)**.

Snapshot names are only retained if you save the preset. See below.

# Saving Snapshots


Press **SAVE** twice to save the preset.

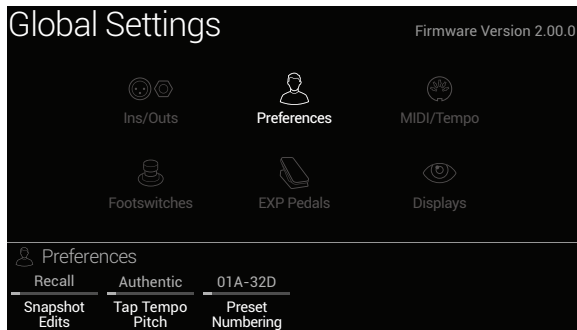
Saving a preset stores all of its 8 snapshots automatically.

 **NOTE:** Selecting a preset recalls the Snapshot that was active when the preset was saved.

## Determining Snapshot Edit Behavior

Say you're on Snapshot 2 (VERSE) and you change a few things—switch a delay block on, switch a mod block off, tweak an Amp's Gain parameter from your Variax Tone knob, etc. If you switch to Snapshot 4 (CHORUS) and then back to Snapshot 2 for the second verse, should Helix recall those changes or return Snapshot 2 to its state when the preset was last saved? There's no right answer, and Helix lets you choose.

1. Press  and then Knob 6 (Global Settings).
2. Move the joystick to select the Preferences submenu.




3. Turn Knob 1 (Snapshot Edits) to set snapshot edit behavior:


- Recall—Any snapshot edits are recalled when jumping from snapshot to snapshot, and appear as you *last left them* (the default)
- Discard—Any snapshot edits are discarded when jumping from snapshot to snapshot, and appear as *the preset was last saved*. If you want to save changes made to a snapshot while Snapshot Edits is set to “Discard,” **press SAVE twice before selecting another snapshot**

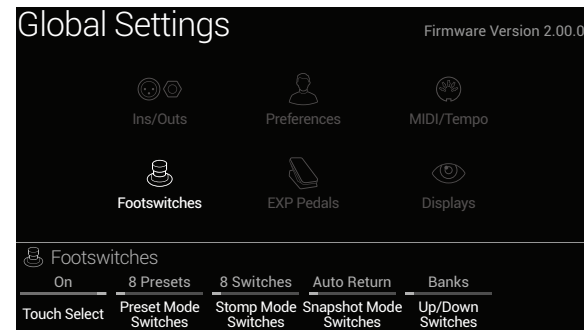
The camera icon on the home screen shows you the Snapshot Edits setting at a glance—When set to “Recall,” the camera is gray; when set to “Discard,” the camera is red.



 **SHORTCUT:** At any time, hold **BYPASS** and press **SAVE** to toggle this setting.

## Arranging Preset, Snapshot, and Stomp Switches

1. Press  and then Knob 6 (Global Settings).
2. Move the joystick to select the Footswitches submenu.



3. Turn Knob 2 (Preset Mode Switches) to customize the middle eight switches:

- 8 Presets—Two banks of presets (the default)
- Preset/Stomp—One bank of presets on the top row, switches from stomp mode on the bottom row
- Stomp/Preset—Switches from stomp mode on the top row, one bank of presets on the bottom row

- Preset/Snap—One bank of presets on the top row, Snapshots 1-4 on the bottom row
- Snap/Preset—Snapshots 1-4 on the top row, one bank of presets on the bottom row
- Snap/Stomp—Snapshots 1-4 on the top row, switches from stomp mode on the bottom row (see image below)
- Stomp/Snap—Switches from stomp mode on the top row, Snapshots 1-4 on the bottom row
- 8 Snapshots—Snapshots 1-8



#### 4. Turn Knob 5 (Up/Down Switches) to customize FS1 and FS7 on the far left.

Select Banks (Bank Queue), Presets, or Snapshots (see image above).

**SHORTCUT:** At any time, press and hold both FS1 and FS7 to cycle through BANK  $\wedge/\vee$ , PRESET  $\wedge/\vee$ , and SNAPSHOT  $\wedge/\vee$ .

## Tips for Creative Snapshot Use

- The obvious use case for snapshots is designating them to specific sections of your song. For example, Snapshot 1 would be the Intro, Snapshot 2 would be Verse 1, Snapshot 3 might be the Chorus, and so on
- Turn any Delay, Reverb, and/or FX Loops blocks' Trails parameter to "On" for seamless spillover between snapshots
- "SNAPSHOT (X)" on the scribble strip isn't very descriptive. Don't forget to name your snapshots—See ["Renaming a Snapshot"](#)
- Worried that further tweaking might make your tone worse, not better? Snapshots are a great way to compare minor changes between tones without having to take your hands off the guitar.
- Want to switch channels on your external amp but don't want to waste a stomp footswitch on it? Command Center MIDI, CV, and Ext Amp Instant messages are automatically transmitted when a Snapshot is recalled.
- Set different keys in Harmony Delay blocks or intervals in Pitch blocks per snapshot
- Set different Variax models (or tuning!) per snapshot
- Having difficulty maintaining consistent volume throughout a song? Set the Output block's Level parameter per snapshot

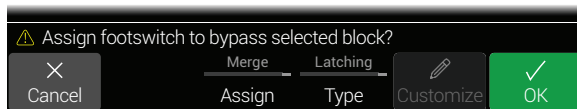
# Bypass Assign

## Quick Bypass Assign

1. From the Home screen, use the joystick to select the block you wish to assign to a footswitch.

Input, Output, Split > Y, and Merge blocks cannot be assigned to footswitches. Split > A/B or Split > Crossover blocks *can* be assigned to a footswitch; when bypassed, they behave exactly like Split > Y.

2. Step on FS6 (MODE) to select Stomp mode (if not already there).
3. Touch and hold (but don't press) the desired footswitch until the following dialog appears:



If you want to replace any other blocks that may already be assigned to the footswitch, turn Knob 4 (Assign) to "Replace." Otherwise, leave it set to "Merge," which allows for multiple blocks to be assigned to the same switch.

If you want to change the way the switch behaves, turn Knob 5 (Type) to "Momentary" or "Latching."

**Momentary** The block is bypassed (or enabled, if already bypassed) for as long as you hold the switch.

**Latching** The block is bypassed (or enabled, if already bypassed) every time you press the switch. This is the default.

4. Press Knob 6 (OK).

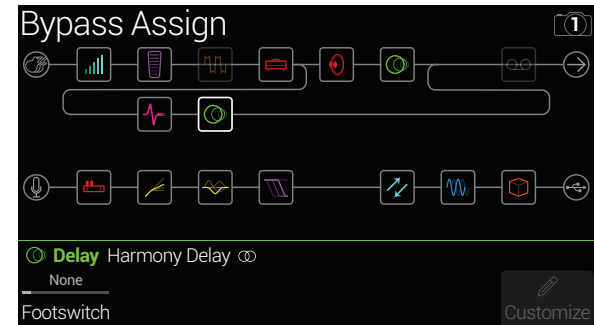
## Manual Bypass Assign

The Bypass Assign screen is where you manually assign blocks to (and un-assign blocks from) Stomp mode footswitches.

1. Press  to open the Menu.

2. Press Knob 1 (Bypass Assign).

The Bypass Assign screen looks very similar to the Home screen:



3. Move the joystick to select the block you want to bypass from a footswitch.

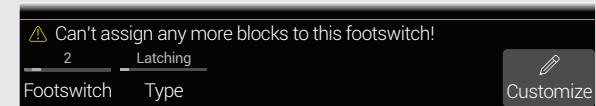
Input, Output, Split > Y, and Merge blocks cannot be assigned to footswitches. Split > A/B or Split > Crossover blocks *can* be assigned when bypassed, they behave exactly like Split > Y.

4. Turn Knob 1 (Footswitch) to select footswitch 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, or Exp Toe.

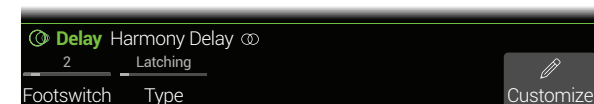
**NOTE:** Footswitch 1 and 7 can be assigned at any time, but they only appear if the Stomp Mode Switches option is set to "10 switches" (see "[Global Settings > Footswitches](#)"). Otherwise, FS1 and FS7 appear as BANK ^ and BANK v.

**NOTE:** Adding a Volume Pedal, Pan, Wah, or Pitch Wham block automatically assigns it to "Exp Toe".

**NOTE:** Each footswitch can have up to 8 assignments. If you attempt to add a ninth, "Can't assign any more blocks to this footswitch!" appears in the header:



Selecting any footswitch (other than Exp Toe) displays Knob 2 (Type):





## 5. Turn Knob 2 (Type) to select "Latching" or "Momentary."

**Momentary** The block is bypassed (or enabled, if already bypassed) for as long as you hold the switch.

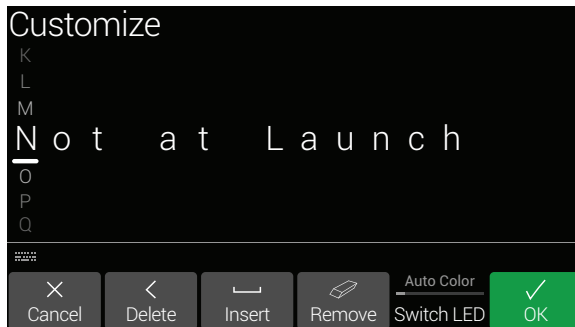
**Latching** The block is bypassed (or enabled, if already bypassed) every time you press the switch. This is the default.

 **NOTE:** Footswitch type (momentary or latching) is determined per footswitch, not per assignment.

## Customizing a Footswitch Label

1. From the Bypass Assign screen, use the joystick to select a block whose bypass is assigned to a footswitch and press Knob 6 (Customize).

The Customize screen appears:




Move the joystick left or right to move the cursor.

Turn the joystick (or move it up/down) to change the selected character.


Press Knob 2 (Delete) to delete the selected character and shift all following characters to the left.


Press Knob 3 (Insert) to insert a space and shift all following characters to the right.

 **SHORTCUT:** Press the joystick to cycle through A, a, 0, and [SPACE].

Press Knob 4 (Remove) to remove the custom label, after which the footswitch label displays its normal assignment. Remove is grayed out until a custom name is applied.

2. Press Knob 6 (OK).

 **SHORTCUT:** Once any item has been assigned to a footswitch, touch and hold (but don't press) the footswitch, and a duplicate Customize button appears above Knob 5.

 **NOTE:** Footswitches can also be customized from the ["Command Center"](#) screen (or from within the *Helix* editor application!)

## Customizing a Footswitch Color

1. From the Customize screen, turn Knob 5 (Switch LED) to select the desired color (or turn it off).

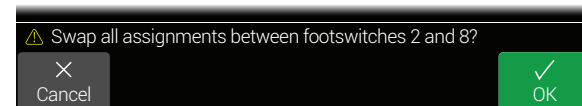
Normally, you should leave this set to "Auto Color."

2. Press Knob 1 (Cancel) or  to exit.

## Swapping Footswitches

If you want to change the location of Stomp mode footswitches (especially those with multiple items assigned or custom labels and LED ring colors), instead of manually reassigning everything, you can quickly swap all assignments between two footswitches.

1. Touch (but don't press) any two Stomp mode footswitches until the following dialog appears:

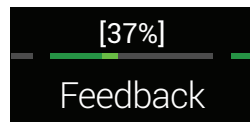


2. Press Knob 6 (OK).

# Controller Assign

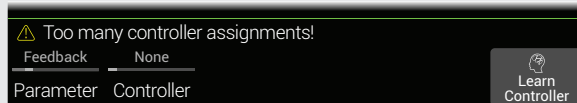
Helix provides a wide variety of tools for controlling your tone during a performance. The most obvious one is the built-in expression pedal (often assigned to wah or volume), but you may also assign footswitches to toggle between two values of a given parameter or parameters, control a parameter from an external MIDI device, or the volume and tone knobs on a James Tyler Variax or Variax Standard guitar. You can even have parameters instantly change when selecting different snapshots within a preset.

If a controller has been assigned to a parameter, the value appears white and in brackets:



**NOTE:** Adding a Wah or Pitch Wham block automatically assigns it to be controlled by EXP 1. Adding a Volume Pedal or Pan block automatically assigns it to be controlled by EXP 2.

**NOTE:** Each preset can have up to 64 controller assignments. If you attempt to add a 65th, "Too many controller assignments!" appears in the header:



In this case, you must clear some controllers to free up assignments. See "[Clearing a Block's Controller Assignment\(s\)](#)" or "[Clearing All Controller Assignments](#)".

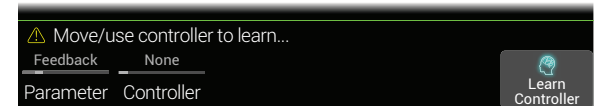
## Quick Controller Assign

1. **From the Home screen, press and hold the knob for the parameter you wish to control.**

Helix jumps to the Controller Assign page and displays your parameter above Knob 1 (Parameter).

2. **Press Knob 6 (Learn Controller).**

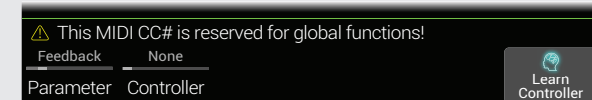
The button's brain icon glows blue and the header reads "Move/use controller to learn...":



3. **Move the expression pedal, turn the Volume or Tone knob on a connected Variax, step on a Stomp mode footswitch, send a MIDI CC message from your keyboard, etc.**

The controller name appears above Knob 2 (Controller).

**NOTE:** Helix has reserved specific MIDI CC messages for global functions; these CCs cannot be used as controllers. If you attempt to learn a CC message reserved for global functions, the following dialog appears:



See "[MIDI](#)" for more information.

4. **Press  to return to the Home screen.**

**SHORTCUT:** To assign a parameter to the Snapshots controller, it's even easier—just push and turn the parameter's knob. The value appears white and in brackets, indicating it's now assigned to a controller.

**SHORTCUT:** Hold BYPASS and press a parameter knob to quickly remove any controller assignment (including the Snapshots controller). The value appears without brackets, indicating no controller is assigned to it.

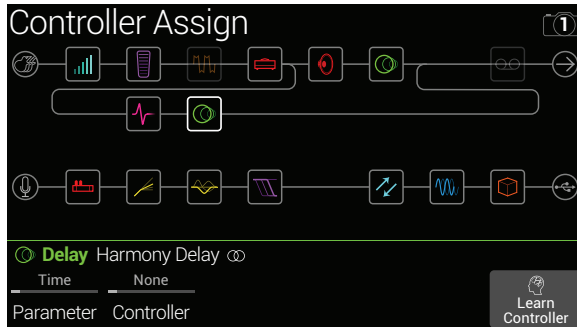
## Manual Controller Assign

The Controller Assign screen is where you manually assign parameters to be adjusted in real time by controllers.

1. **Press  to open the Menu.**

## 2. Press Knob 2 (Controller Assign).

The Controller Assign screen looks very similar to the Home screen:



## 3. Move the joystick to select the block containing the parameter to which you want to assign a controller.

The most recently accessed parameter appears above Knob 1 (Parameter).

**NOTE:** Amp+Cab and Cab > Dual blocks are special in that they represent two models within a single block. To assign controllers to the amp parameters in an Amp+Cab block, press <PAGE until the amp icon is white. To assign controllers to the cab parameters, press PAGE> until the cab icon is white.



To assign controllers to the first cab's parameters in a Cab > Dual block, press <PAGE until the left cab icon is white. To assign controllers to the second cab's parameters, press PAGE> until the right cab icon is white.



## 4. Turn Knob 1 (Parameter) to select the parameter you wish to control.

## 5. Turn Knob 2 (Controller) to select the desired controller.

**None** Removes the controller assignment.

**Exp Pedal 1, 2, or 3** The most common type of controller. Used to control volume, wah, Pitch Wham, etc.

**Variac Vol, Variac Tone** If you have a James Tyler Variac or Variac Standard guitar, its volume and tone knobs can be used to adjust a wide variety of parameters in Helix.

**Footswitch 1-5, 7-11** Stepping on a Stomp mode footswitch can toggle between a parameter's min and max values.

If a footswitch is assigned to one parameter only (no blocks, Command Center messages, or other parameters), the parameter name appears in the scribble strip:

Feedback



Selecting Footswitch 1-5 or 7-11 will display Knob 3 (Type). Turn knob 3 to select "Momentary" or "Latching." Momentary means the value will change for as long as you hold the switch. Latching toggles between Min and Max values every time you press the switch.

Footswitches can be customized from the ["Command Center"](#) screen.

**MIDI CC** Selecting "MIDI CC" will display Knob 3 (MIDI CC#). Turn Knob 3 to select the desired MIDI CC number.

**Snapshots** Although all controller-assigned parameters are updated per snapshot, an additional "Snapshots" controller is available when other controllers are already used.

**NOTE:** Footswitch 1 and 7 can be assigned at any time, but they only appear if the Stomp Mode Switches option is set to "10 switches" (see ["Global Settings > Footswitches"](#)). Otherwise, FS1 and FS7 appear as BANK ^ and BANK v.

**NOTE:** Footswitch type (momentary or latching) is determined *per footswitch*, not per assignment.

**NOTE:** Some CC#s cannot be selected, as they are reserved for the Helix global functions. See ["MIDI"](#) for more information.

## 6. If desired, turn Knob 4 (Min Value) and Knob 5 (Max Value) to set the range you wish to control.

**TIP:** To reverse controller behavior, swap the min and max values.

## Tips for Creative Controller Assignment

- If you assign a footswitch to more than one controller or other item, "MULTIPLE (X)" on the scribble strip isn't very descriptive. Don't forget to custom label it - See "[Customizing a Command Footswitch Label](#)"
- By default, a parameter's Min and Max values will be pretty extreme. It pays to play pretty conservative here, as subtle parameter adjustments go a long way
- To smoothly blend between the tone on parallel paths A and B, select a Split > A/B block and assign the Route To parameter to an expression pedal. By default, a heel-down position means the signal passes fully through Path A. Moving the pedal toward the toe-down position will gradually crossfade into Path B. Alternatively, assign a footswitch to control the Route To parameter, for instantly switching back and forth
- If you're looking for a gritty boost for a solo, instead of adding a Distortion block, try assigning a footswitch to increase both the Mid and Channel Volume parameters of an Amp+Cab, Amp, or Preamp block
- If you're looking for an ultra-clean boost, instead of adding a Volume/Pan > Gain block, try assigning a footswitch to increase the Level parameter of a Merge > Mixer or Output block
- If you have a favorite delay or reverb pedal, use an FX Loop block to insert it into your tone. Assign EXP 1, 2, or 3 to control the block's Mix parameter, which will smoothly blend the pedal into your tone
- For extreme psychedelic dub delay squeals, assign a footswitch to both increase a Delay's feedback and decrease its time
- Assign a footswitch to toggle between two Delay > Time parameter values, such as 1/4 and 1/8 dotted
- Assign the tone knob on your JTV Variax or Variax Standard guitar to a Pitch Wham block's Position parameter. Watch guitarists in the audience try to figure out how a knob on your guitar generates huge dive bomb effects
- Assign multiple Amp+Cab parameters to a single switch. With enough assignments, you could almost treat the switch as an A/B amp channel switcher
- Assign Mic or IR Select to a footswitch. Set the two mic models or IRs as min and max values. Now you can instantly toggle between two mics or two IRs

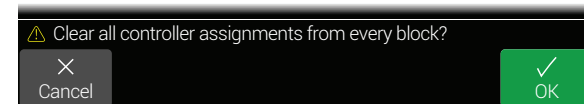
## Clearing a Block's Controller Assignment(s)

1. From the Controller Assign screen, select the block whose controller assignments you want to clear and press ACTION.
2. Press Knob 1 (Clear Controllers).

## Clearing All Controller Assignments

1. From the Controller Assign screen, press ACTION.
2. Press Knob 2 (Clear All Controllers).

The following dialog appears:



3. Press Knob 6 (OK).

**!** **IMPORTANT!** Clearing All Controller Assignments also removes the Wah and Volume assignments from EXP 1 and EXP 2. Use this function with caution!

## Customizing a Controller Footswitch Label

As there's no room for a dedicated Customize button on the Controller Assign page, customizing scribble strips for footswitches only assigned to one or more controllers must be done from the "[Command Center](#)" page.

**!** **SHORTCUT:** Once any item has been assigned to a footswitch, touch and hold the footswitch (but don't press), and a Customize button appears above Knob 5.

# Command Center

Helix also just so happens to be a world-class master remote control for your entire touring or studio rig. Each of its Stomp mode footswitches and expression pedals can be used to send a variety of MIDI, CV/expression, or External Amp commands to your guitar amps, vintage pedals, synths, or even other modelers. In addition, up to six "Instant" ⚡ commands can be transmitted automatically when a Helix preset is recalled, for starting your DAW, triggering a MIDI-controlled lighting system, or switching presets on external gear.

All Command Center assignments are stored per preset, but they can be copied and pasted to other presets. See ["Copying and Pasting a Command"](#)

**NOTE:** The Value parameters of any instant MIDI CC, Bank/Prog, MMC, and CV Out messages, plus the state (dim or lit) of any CC Toggle, CV Toggle, and Ext Amp messages are automatically recalled when selecting a snapshot.

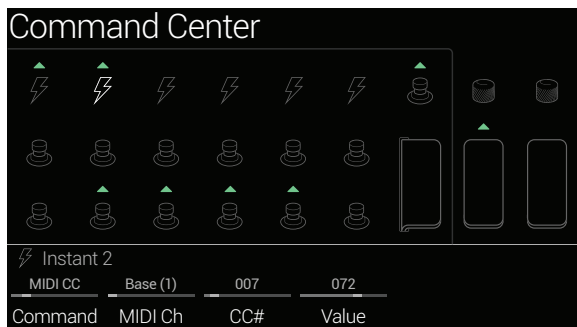
**NOTE:** All MIDI-based Command Center messages are transmitted via MIDI and USB simultaneously.

## Assigning a Command

1. Press **≡** to open the Menu.

2. Press **Knob 3 (Command Center)**.

Any switches, pedals or instant locations with commands assigned appear with turquoise triangles above them:



3. Move the joystick to select the footswitch, pedal, Variax knob, or instant location you wish to use to send the command.

4. Turn **Knob 1 (Command)** to select the type of command you wish to transmit.

Not all command sources can send the same types of commands.

Select "None" to remove any command assignment.

5. Turn **Knobs 2-5 to adjust the command's settings, which are determined by the type of command:**

MIDI CC (Continuous Controller)		
Knob	Parameter	Description
2	MIDI Ch	Sets the CC message's MIDI channel (1-16). When set to "Base", Helix follows the Global MIDI channel, which is set from the <a href="#">"Global Settings &gt; MIDI/Tempo"</a> page.
3	CC #	Sets the CC number (0-127).
4	Value [Min Value]	Sets the CC number's value (0-127). For EXP 1-3 and Variax Volume/Tone Knob, sets the minimum CC value controlled by the pedal or knob.
5	[Max Value]	For EXP 1-3 and Variax Volume/Tone Knob, sets the maximum CC value controlled by the pedal or knob.

CC Toggle		
Knob	Parameter	Description
2	MIDI Ch	Sets the CC messages' MIDI channel (1-16). When set to "Base", Helix follows the Global MIDI channel, which is set from the <a href="#">"Global Settings &gt; MIDI/Tempo"</a> page.
3	CC #	Sets the CC number (0-127).
4	Dim Value	Sets the CC number's value (0-127) when the footswitch ring is dim. For Footswitches 7 (MODE) and 12 (TAP), appears as "Initial Val."
5	Lit Value	Sets the CC number's value (0-127) when the footswitch ring is lit. For Footswitches 7 (MODE) and 12 (TAP), appears as "Toggle Val."


**NOTE:** For CC Toggle commands, one of two values is automatically transmitted upon preset recall, determined by the footswitch's state (dim or lit) when the preset was saved. Subsequent presses of the footswitch toggle between the two states' CC values—Knob 4 (Dim Value) and Knob 5 (Lit Value).


Bank/Prog		
Knob	Parameter	Description
2	<b>MIDI Ch</b>	Sets the Bank/Program message's MIDI channel (1-16). When set to "Base", Helix follows the Global MIDI channel, which is set from the <a href="#">"Global Settings &gt; MIDI/Tempo"</a> page.
3	<b>Bank CC00</b>	Sets the CC#00 (Bank MSB) value. Select "Off" if the receiving device shouldn't respond to Bank MSB.
4	<b>Bank CC32</b>	Sets the CC#32 (Bank LSB) value. Select "Off" if the receiving device shouldn't respond to Bank LSB.
5	<b>Program</b>	Sets the Program Change (PC) value. Select "Off" if you only want to send a Bank MSB and/or Bank LSB message.


Note On		
Knob	Parameter	Description
2	<b>MIDI Ch</b>	Sets the note's MIDI channel (1-16). When set to "Base," Helix follows the Global MIDI channel, which is set from the <a href="#">"Global Settings &gt; MIDI/Tempo"</a> page.
3	<b>Note</b>	Sets the MIDI note value (C-1 ~ G9). Middle C is C3.
4	<b>Velocity</b>	Sets the MIDI note's velocity (0-127).
5	<b>Note Off</b>	Determines whether the MIDI note sustains until pressing the switch again (Latching) or sustains only while the switch is held (Momentary).

MMC (MIDI Machine Control)		
Knob	Parameter	Description
2	<b>Message</b>	Determines the message type.

Ext Amp		
Knob	Parameter	Description
2	<b>Select</b>	Determines the Ext Amp connection [1 (Tip-to-sleeve), 2 (Ring-to-sleeve), or both] for switching an external amp's channel, reverb, or other functions.


 **IMPORTANT!** Connect EXT AMP 1/2 only to amplifiers that utilize "short-to-sleeve" footswitch inputs. Connecting to any other sort of input could cause permanent damage to both your amp and Helix! If you're not sure if your amp has short-to-sleeve inputs, contact the manufacturer.

 **IMPORTANT!** The Helix device's ability to control external amp channel and/or reverb switching has been tested with many popular amps and heads. Unfortunately this does not guarantee compatibility with all products. Note that, depending on the circuitry of the channel switching jack in the guitar amp used, the EXT Amp function may not operate as expected.

 **NOTE:** When an Ext Amp command is assigned to Instant 1-6, the connection determined by Knob 2 (Select) is made when the preset is loaded. When an Ext Amp command is assigned to a footswitch, the footswitch's current state (dim or lit) determines whether or not the External Amp connection is made when the preset is loaded; when dim, no connection is made; when lit, the connection determined by Knob 2 (Select) is made. Subsequent presses of the footswitch toggle the connection on (LED lit) and off (LED dark).

CV (Control Voltage) Out		
Knob	Parameter	Description
2	<b>CV Value [CV Min Val]</b>	Sets the CV value (1-100) appearing at the Helix device's CV/Expression jack. For EXP 1-3 and Variax Volume/Tone Knob, sets the minimum CV value controlled by the pedal or knob.
3	<b>[CV Max Val]</b>	For EXP 1-3 and Variax Volume/Tone Knob, sets the maximum CV value controlled by the pedal or knob.

CV (Control Voltage) Toggle		
Knob	Parameter	Description
2	<b>Dim Value</b>	Sets the CV value (0-100) when the footswitch ring is dim. For Footswitches 7 (MODE) and 12 (TAP), appears as "Initial Val."
3	<b>Lit Value</b>	Sets the CV value (0-100) when the footswitch ring is lit. For Footswitches 7 (MODE) and 12 (TAP), appears as "Toggle Val."

 **NOTE:** For CV Toggle commands, one of two CV values appears at the CV/Expression output, automatically transmitted upon preset recall, determined by the footswitch's state (dim or lit) when the preset was saved. Subsequent presses of the footswitch toggle between the two states' CV values—Knob 4 (Dim Value) and Knob 5 (Lit Value).

## Copying and Pasting a Command

1. Select the location containing the command you wish to copy and press ACTION.
2. Press Knob 1 (Copy Command).
3. Select the location to which you want to paste the command—even in a different preset—and press ACTION.
4. Press Knob 3 (Paste Command).

## Copying and Pasting All Commands

Setting up the same or similar set of commands across multiple presets can quickly become tiresome. Fortunately, Helix lets you quickly copy and paste all commands to another preset.

1. From the Command Center page, press ACTION.
2. Press Knob 2 (Copy All Commands).
3. Select the preset to which you want to paste the commands and press ACTION.
4. Press Knob 3 (Paste All Commands).

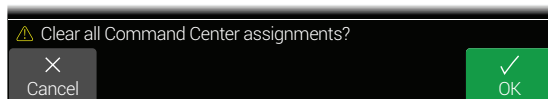
## Clearing a Command

1. Select the location containing the command you want to clear and press ACTION.
2. Press Knob 4 (Clear Command).

## Clearing All Commands

1. From the Command Center page, press ACTION.
2. Press Knob 5 (Clear All Commands).

The following dialog appears:

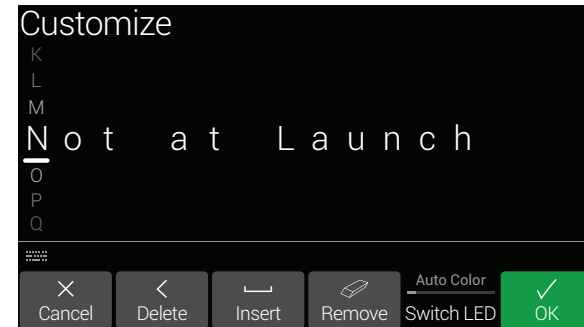


3. Press Knob 6 (OK).

## Customizing a Command Footswitch Label

1. From the Command Center screen, select Footswitch 1-5, 7-11, or Exp Toe with a command assigned and press Knob 6 (Customize).

The Customize screen appears:



Move the joystick left or right to move the cursor.

Turn the joystick (or move it up/down) to change the selected character.

Press Knob 2 (Delete) to delete the selected character and shift all following characters to the left.

Press Knob 3 (Insert) to insert a space and shift all following characters to the right.



**SHORTCUT:** Press the joystick to cycle through A, a, 0, and [SPACE].

Press Knob 4 (Remove) to remove the custom label, after which the footswitch displays its normal assignment. Remove is grayed out until a custom name is applied.

2. Press Knob 6 (OK).



**NOTE:** Footswitches can also be customized from the ["Bypass Assign"](#) screen (or *Helix* editor application!)

## Customizing a Command Footswitch Color

1. From the Customize screen, turn Knob 5 (Switch LED) to select the desired color (or turn it off).

Normally, you should leave this set to "Auto Color."

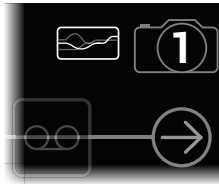
2. Press Knob 1 (Cancel) or  to exit.

# Global EQ

The Helix device's Global EQ has three fully parametric bands plus variable low and high cut filters, and is used for compensating for the wide disparity in acoustic environments on tour or when traveling from studio to studio. Global EQ is applied to all setlists and presets, and can be heard from the 1/4" outputs, XLR outputs, or both.

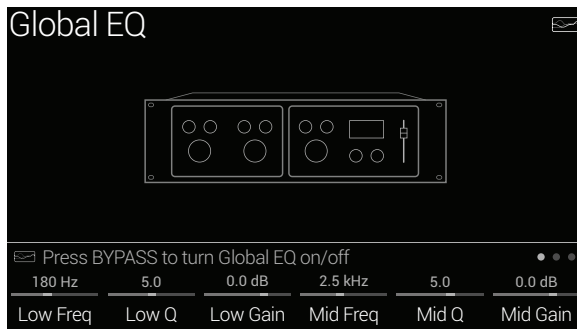
**NOTE:** Global EQ is never heard from Send, Digital, or USB outputs.

When Global EQ is active, the Home screen shows the Global EQ icon to the left of the snapshots icon:



1. Press to open the Menu.
2. Press Knob 5 (Global EQ).

The Global EQ screen appears:



3. Press **BYPASS** to turn Global EQ on and off.

**SHORTCUT:** From the Home screen, press and hold **BYPASS** to turn Global EQ on and off without having to navigate to the Global EQ page.

**TIP:** Press **PAGE>** to view and turn Knob 1 (Apply EQ) to set whether Global EQ is applied to only the 1/4" outputs, only the XLR outputs, or both.

## Resetting Global EQ

Resetting the Global EQ returns its settings to factory default (flat).

1. From the Global EQ screen, press **ACTION**.
2. Press Knob 1 (Reset Global EQ).

The following dialog appears:



3. Press Knob 6 (OK).

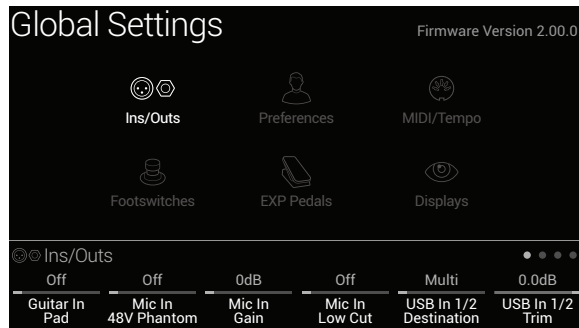


# Global Settings

The Global Settings menu contains additional parameters that apply to all setlists and presets, such as input and output levels, custom footswitch mode settings, etc. The upper right corner displays the Helix device's current firmware version. Visit [line6.com/support](https://line6.com/support) for information on the latest Helix firmware updates.

1. Press **≡** to open the Menu.
2. Press **Knob 6 (Global Settings)**.

The Global Settings screen appears:



3. Move the joystick to select one of the six submenus.

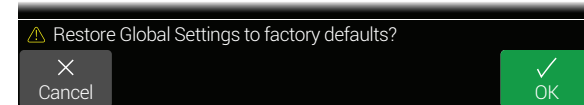
If necessary, press <PAGE/PAGE> to view more parameters.

## Resetting All Global Settings

Resetting the Helix Global Settings returns them to factory default. Performing this reset does not affect any presets you may have created.

1. From any Global Settings submenu, press **ACTION**.
2. Press **Knob 1 (Factory Settings)**.

The following dialog appears:



3. Press **Knob 6 (OK)**.

## Global Settings > Ins/Outs

Page	Knob	Parameter	Description
	1	<b>Guitar In Pad</b>	If your guitar or bass has active or really loud pickups, you may want to turn this on. There's really no rule; use what sounds best.
	2	<b>Mic In 48V Phantom</b>	When on, Helix provides 48V from the XLR Mic In jack to power studio condenser microphones.
	3	<b>Mic In Gain</b>	Sets analog gain for the XLR Mic In jack.
● ● ● ●	4	<b>Mic In Low Cut</b>	Sets the frequency of the Mic In's dedicated, variable low-cut filter. Turn fully counterclockwise (or push) to disable.
	5	<b>USB In 1/2 Destination</b>	If you like to jam along with iTunes®, YouTube™ or your DAW, this setting determines from which of the Helix outputs your computer or iPad primary stereo audio stream will be heard. USB In 1/2 bypasses all Helix processing; USB 3/4, 5/6, and 7/8 can be selected as input blocks for processing DAW tracks or re-amping. Normally, you should choose "Multi," which sends USB In 1/2 directly to the 1/4", XLR, and Digital outputs. See " <a href="#">USB Audio</a> ".
	6	<b>USB In 1/2 Trim</b>	Sets the level of incoming audio from USB 1/2, which bypasses all Helix processing. Normally, this should be left at 0.0dB.
	1	<b>1/4" Outputs</b>	Choose "Instrument" when connecting the Helix 1/4" outputs to stompboxes or the front of guitar amps; choose "Line" when connecting to mixers, studio monitors, or standalone recorders. When using a single amp or speaker, connect only the LEFT/MONO 1/4" jack.
	2	<b>XLR Outputs</b>	Choose "Mic" when connecting the Helix XLR outputs to standalone mic preamps or the XLR mic inputs on mixers; choose "Line" when connecting to studio monitors or the line inputs on mixers. When using a mono playback system, connect only the LEFT/MONO XLR jack.
● ● ● ●	3	<b>Send/Return 1</b>	
	4	<b>Send/Return 2</b>	Choose "Instrument" when using a Send/Return pair as an FX loop for stompboxes; choose "Line" when using a Send/Return pair as an FX loop for line-level rack processors, or as additional inputs and outputs for connecting keyboards, drum machines, mixers, and other gear.
	5	<b>Send/Return 3</b>	
	6	<b>Send/Return 4</b>	
	1	<b>Re-amp Src (USB 7)</b>	USB out 7 and 8 are dedicated for recording a DI signal which can be used for re-amping; choose which two inputs will be sent dry (unprocessed) to your DAW. See " <a href="#">USB Audio</a> ".
	2	<b>Re-amp Src (USB 8)</b>	
	3	<b>Volume Knob Controls</b>	Determines which output(s) are affected when turning the top panel VOLUME knob. For example, you may want to control the level sent from the 1/4" outputs to your stage monitor without affecting the XLR level sent to the front-of-house mixer.
● ● ● ●	4	<b>Headphones Monitor</b>	Determines which signal(s) are heard from the PHONES output. Normally you would set this to Multi (1/4"+XLR+Digital+USB 1/2), but there may be a situation where you only want to hear what's sent from the 1/4" or XLR outs, particularly if they are being fed different signals (or band members!)
	5	<b>Digital Output</b>	One digital output can be active at a time; choose S/PDIF or AES/EBU. Connecting an L6 LINK device to Helix automatically disables S/PDIF out. USB audio is not affected by this setting. Also see " <a href="#">Output</a> ".
	6	<b>Digital Out Level</b>	Sets the S/PDIF and AES/EBU output level. Normally, this should be left at 0.0dB.
● ● ● ●	1	<b>Sample Rate</b>	Determines the sample rate of the Helix S/PDIF and AES/EBU outputs; choose 44.1 kHz (the default), 48 kHz, 88.2 kHz, or 96 kHz. When connecting to another device's S/PDIF or AES/EBU input, make sure both units are set to the same sample rate. Note that this setting does not affect Helix USB audio sample rate operation.















## Global Settings > Preferences

Knob	Parameter	Description
1	<b>Snapshot Edits</b>	Determines whether or not any edits made to a snapshot (block on/off, parameter control, Command Center, tempo) are remembered when returning to that snapshot. When set to "Recall," any snapshot edits are recalled when jumping from snapshot to snapshot, and appear as you last left them. When set to "Discard," any snapshot edits are discarded when jumping from snapshot to snapshot, and appear as the preset was last saved. If you want to save changes made to a snapshot while Snapshot Edits is set to "Discard," press SAVE twice before selecting another. The camera icon on the home screen shows you the Snapshot Edits setting at a glance—When set to "Recall," the camera is gray; when set to "Discard," the camera is red. At any time, hold BYPASS and press SAVE to toggle this setting. Also see " <a href="#">Determining Snapshot Edit Behavior</a> "
2	<b>Tap Tempo Pitch</b>	Determines how delay repeats behave when repeatedly pressing TAP. "Accurate" respects the natural pitch fluctuations inherent when changing a real delay pedal's time knob; "Transparent" minimizes these artifacts.
3	<b>Preset Numbering</b>	Determines whether each setlist's presets appear as 32 banks of four (A B C D) or are numbered 000-127 (convenient when recalling presets via MIDI program change messages).

## Global Settings > MIDI/Tempo

Knob	Parameter	Description
1	<b>MIDI Base Channel</b>	Sets the system base MIDI channel that Helix uses for both receiving and sending MIDI communication via MIDI and USB. Note that MIDI messages assigned from the Command Center page can be set to any MIDI channel.
2	<b>MIDI Thru</b>	When on, MIDI OUT also acts as a MIDI THRU; that is, it passes through any MIDI messages received at the MIDI IN jack.
3	<b>MIDI Over USB</b>	When on, Helix receives and transmits MIDI data via USB in the same capacity as its MIDI jacks.
4	<b>MIDI PC Send/Receive</b>	Determines whether or not Helix automatically sends MIDI program change (PC) messages when selecting presets. This setting does not affect any MIDI commands manually assigned from the Command Center page. Also determines whether or not Helix responds to program changes.
5	<b>Tempo Select</b>	The "Speed" or "Time" parameters of all tempo-based FX can be set to a note value that follows Tap Tempo or the tempo set with Knob 6 (Snapshot BPM/Preset BPM/Global BPM). Choose whether the Helix tempo is stored and recalled with each snapshot, recalled with each preset, or is applied globally across all presets and snapshots.
6	<b>Snapshot BPM/Preset BPM/Global BPM</b>	This is an alternative way to set the Helix tempo, as opposed to stepping repeatedly on the TAP footswitch. Depending on the Knob 5 (Tempo Select) setting, this value is saved per snapshot, per preset, or globally. The Helix device's tempo has a resolution of 0.1 BPM (beats per minute). You can also quickly access this parameter at any time by briefly touching the TAP footswitch.

## Global Settings > Footswitches

Knob	Parameter	Description
1	<b>Touch Select</b>	If you don't want Helix to automatically select assigned blocks or items when you touch a switch top, or engage Quick Bypass Assign when you touch a switch top for 2 seconds, set this to "Off." If you play barefoot, you might want to turn this off as well.
2	<b>Preset Mode Switches</b>	By default, Preset footswitch mode displays eight presets (four on each row). Choose from "8 Presets," "Preset/Stomp" (one bank of presets on the top row, switches from stomp mode on the bottom row), "Stomp/Preset" (switches from stomp mode on the top row, one bank of presets on the bottom row), "Preset/Snap" (one bank of presets on the top row, Snapshots 1-4 on the bottom row), "Snap/Preset" (Snapshots 1-4 on the top row, one bank of presets on the bottom row), "Snap/Stomp" (Snapshots 1-4 on the top row, switches from stomp mode on the bottom row), "Stomp/Snap" (switches from stomp mode on the top row, Snapshots 1-4 on the bottom row), and "8 Snapshots" (Snapshots 1-8).
3	<b>Stomp Mode Switches</b>	When set to "10 switches," FS1 (BANK  ) and FS7 (BANK  ) are re-purposed as additional Stomp switches. This is only for Stomp footswitch mode; while in Preset, Snapshot, or Looper footswitch modes, BANK  ) and BANK  ) are retained.
4	<b>Snapshot Mode Switches</b>	When set to "Auto Return," Helix returns to the previous footswitch mode after selecting a snapshot. When set to "Manual Return," Helix stays in Snapshot footswitch mode until you press FS6 (CANCEL).
5	<b>Up/Down Switches</b>	When set to "Presets" or "Snapshots," FS1 (BANK  ) and FS7 (BANK  ) change to PRESET  ) or SNAPSHOT  ) , where pressing either switch instantly selects the next/previous preset or snapshot, without a bank queue. This is useful if you've programmed a fixed set list for your show, and just want to increment through all your presets or snapshots. You can also cycle through all three switch types by pressing and holding both the  ) and  ) switches for two seconds. At any time, press and hold both FS1 and FS7 to cycle through BANK  ) , PRESET  ) , and SNAPSHOT  <h2>Global Settings &gt; EXP Pedals </h2>

Knob	Parameter	Description
1	<b>EXP 1 Polarity</b>	
2	<b>EXP 2 Polarity</b>	If your external expression pedal appears to work backwards—for example, a Volume pedal block is loudest with the heel all the way down—set this to "Inverted."
3	<b>EXP 3 Polarity</b>	
4	<b>EXP 1 Pedal Position</b>	
5	<b>EXP 2 Pedal Position</b>	Determines whether the Helix expression pedal positions are recalled per snapshot, per preset, or applied globally. If you want a Volume Pedal or Wah to maintain its position when switching presets, set this to "Global."
6	<b>EXP 3 Pedal Position</b>	

## Global Settings > Displays

Knob	Parameter	Description
1	<b>LED Ring Brightness</b>	Determines whether the Stomp mode footswitches' colored LED rings appear dim when bypassed, or off when bypassed. When playing in bright sunlight, you may want to set this to "Off/Bright" to increase contrast.
2	<b>Tap Tempo LED</b>	If you'd prefer to not see the FS12 (TAP) red LED constantly flashing, you can turn it off.

# USB Audio

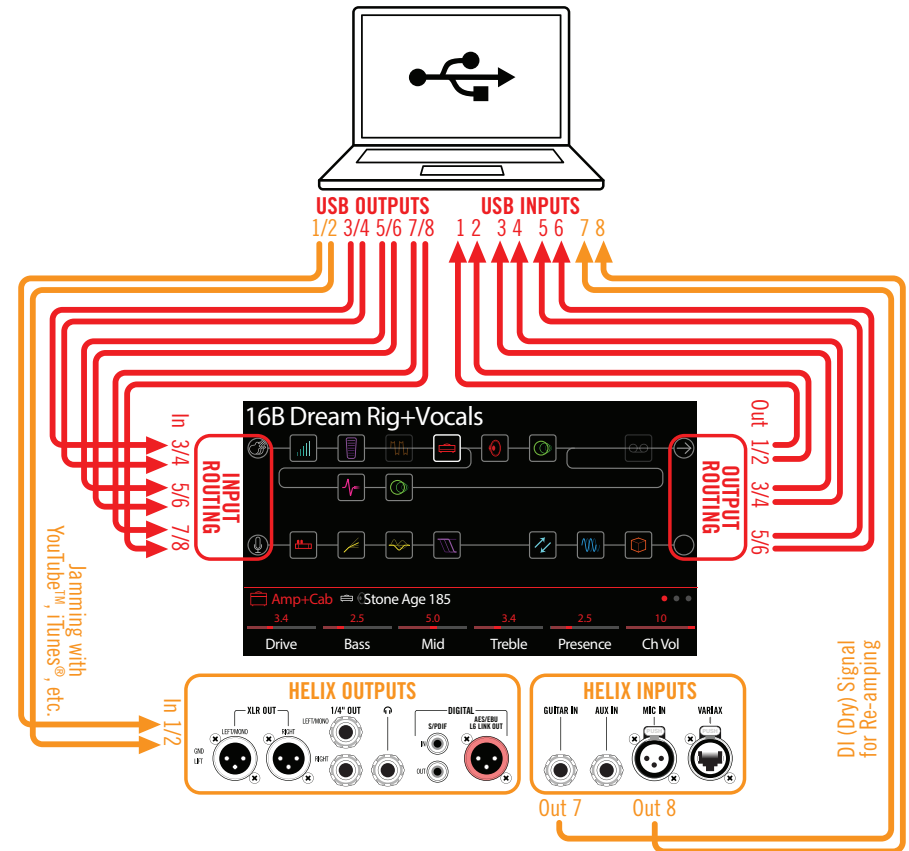
Helix functions as a USB 2.0, multiple-input/output, 24-bit - 96kHz, low-latency audio interface for Windows® and Mac® computers, as well as for iPad and iPhone (with optional Apple Camera Connection Kit adapter), and is compatible with all major DAW software.

**NOTE:** For USB audio operation on Windows® computers, it is necessary to download and install the Line 6 Helix ASIO® driver (see [page 56](#)). For Mac® computers, it is only necessary to download and install the Line 6 Mac® Core Audio driver if you desire audio sample rate operation at rates other than 48kHz (see [page 56](#)). These drivers are available from [line6.com/software](http://line6.com/software). There is no driver installation necessary for an Apple iPad or iPhone.

With the Helix default "Multi" Input and Output block settings in use, you'll automatically hear audio software playback on USB 1/2 routed directly to the Helix XLR, 1/4" and Phones outputs. This lets you jam along with YouTube™, iTunes®, or your DAW tracks without hearing them through a bunch of amps and effects.

If you set your DAW software track to record from Helix USB 1/2, you'll capture your Helix-processed input signal in the DAW track - with zero-latency monitoring, since you are hearing your input from the Helix hardware outputs before it is routed through your software.

The additional Helix USB Inputs and Outputs are available within the Helix Input and Output blocks, and within your DAW software track menus, which can be utilized for numerous routing configurations, all without patching extra cables - see the following examples.



# Hardware Monitoring vs. DAW Software Monitoring

Use of the Helix default "Multi" settings for both the Input and Output blocks provides hardware monitoring, which allows you to hear your live input signal at all times, independent of your DAW software's monitor settings. Hardware monitoring can be desirable since it allows you to hear your live guitar or mic input with Helix processing added and essentially "latency-free," since the monitor signal is not routed through your DAW software.

In some DAW recording scenarios, it may be preferable to utilize your recording application's "input monitoring" or "software monitoring" feature, which routes your live input signal through the armed recording track, thus allowing you to monitor the input effected by any plug-ins you may have inserted on the track. The one downside of DAW software monitoring, however, is that your live input signal will be delayed slightly due to being routed through the software and back to the Helix outputs, which is referred to as "latency." Helix is designed to provide very low latency operation - see "[ASIO Driver Settings \(Windows only\)](#)" for info and settings.

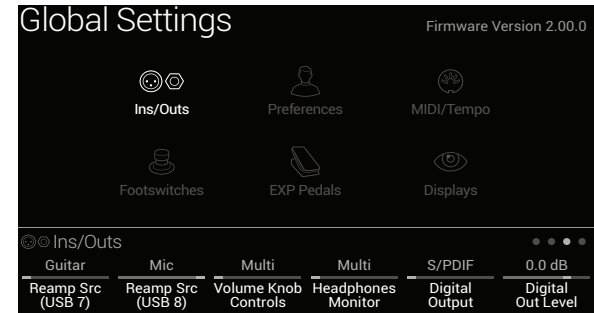
When a DAW track's software monitoring is active, you'll likely *not* want to simultaneously hear the Helix hardware monitoring signal. To achieve this, you can set the Helix Output block to USB Out 3/4 or 5/6. These Output block options will route your Helix-processed, stereo signal out to your DAW software without also providing the Helix hardware monitoring to USB 1/2. You'll then need to set your DAW track to receive from the same selected Helix USB Out to record the Helix-processed signal into the track - or, you can optionally set the DAW track input to Helix USB 7 or USB 8 to record a dry DI signal - see the next section.

**NOTE:** Keep the Helix Input block set to "Multi" and your DAW software's main, Master output to Helix USB 1/2 to also hear playback of your full DAW mix.

## DI Recording and Re-amplification

A common DAW recording technique is to record a dry DI (Direct Input) signal, such as the unprocessed signal from your guitar, Variax or mic, along with your mic'ed or processed tone. This allows you to process the DI track later with plug-ins (such as the [Line 6 POD Farm Plug-In](#)), and/or "re-amplify" the DI track through an amp or other outboard gear. Helix has handy options built right in for recording DI tracks, as well as for easy re-amplification of DI tracks back through your own Helix tones, all without extra hardware or cabling!

Helix offers two special DI outputs, USB Outs 7 and 8, which appear as available options within your DAW software track input menus. These two dedicated USB Outs are tapped directly from the Helix input sources of your choice. To configure the Helix input source for each, go to Global Settings > Ins/Outs > Re-amp Src (USB 7) and Re-amp Src (USB 8), where you can select Guitar, Aux, Variax, Variax Mags or Mic:

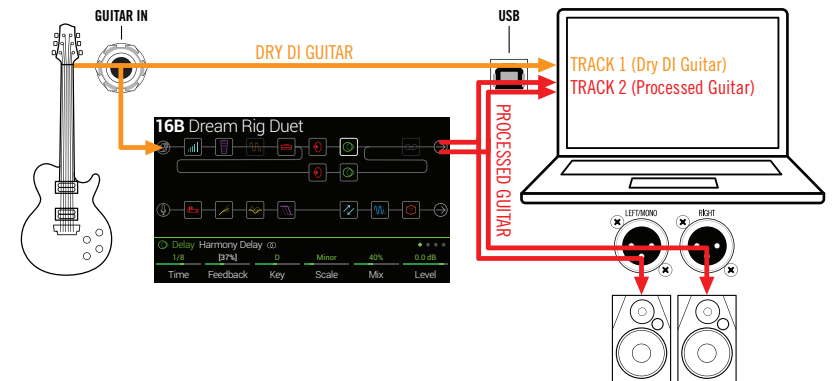


## Recording a Dry DI Track

For this example, we'll record guitar into two DAW tracks simultaneously, with one capturing the Helix-processed tone and the other the unprocessed DI guitar.

1. In the Helix Global Settings>Ins/Outs>Page 3 screen, set Re-amp Src (USB 7) to "Guitar" (as shown above).
2. Dial in your desired Helix tone, while keeping the Helix Input and Output blocks both set to the default "Multi" setting.
3. Create two new audio tracks in your DAW software project: Create one mono track to record the dry DI guitar, and set the track's input to Helix USB 7.

Create one stereo track to record your full, stereo Helix-processed tone and set the track's input to Helix USB 1/2.



4. Set both tracks' outputs, as well as the DAW Master output, to Helix USB 1/2 to allow all tracks to play back through Helix.

**NOTE:** Setting the stereo track's output to Helix USB 1/2 allows you to hear your Helix-processed tone via the Helix hardware monitoring while recording. For this configuration, disable software monitoring on all DAW tracks.

5. Arm both these DAW audio tracks, hit the Record button and start laying down your guitar performance!

Now you have your Helix-processed track to hear with the project, and a separate DI track with which you can further experiment at any time with DAW plug-ins and/or re-amping (see the next section).

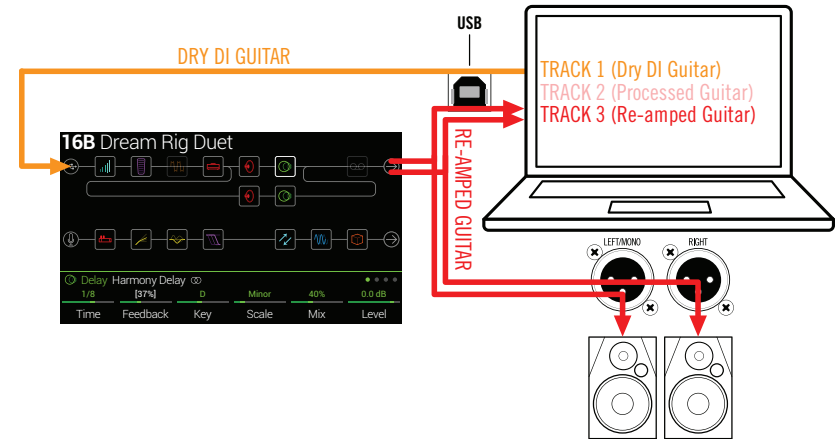
## Re-amping Through Helix

If your DAW software provides options for routing individual audio tracks to outputs other than just the main Helix USB Out 1/2, then you can use these steps for re-amping a dry recorded DI track back through Helix.

1. In your DAW software, set the DI track's Output setting to a Helix stereo USB Out *other than* USB Out 1/2. For this example we'll use Helix USB Out 3/4.
2. Create a new stereo track in your DAW project and set this track's Input and Output both to USB 1/2 - Let's name this track "Re-amped." Arm the track for recording.

**NOTE:** In some DAW software it may be necessary to also activate the software monitoring feature on this "re-amped" track to monitor the Helix-processed signal when playing back your project. See your software's documentation.

3. On Helix, select the Input block and set it to receive from the same USB stereo pair (USB In 3/4) and keep the Output block set to "Multi." Load your choice of amps and effects on the current Helix preset.



4. Now play your DAW project and you'll hear the DI track "re-amped" through your Helix! Adjust the DI track's volume slider to make sure the signal feeding into Helix is not too hot. Tweak your Helix amp & effects as desired while listening with the playback of your project mix.
5. Once you have your re-amplified guitar tone the way you like it, Solo both the DI and re-amped tracks, rewind to the start of the project and hit the DAW Record button, allowing it to capture the signal into the new re-amped track in real-time.

Allow the DI track to play to the end, stop recording and you've created your new re-amped guitar track!

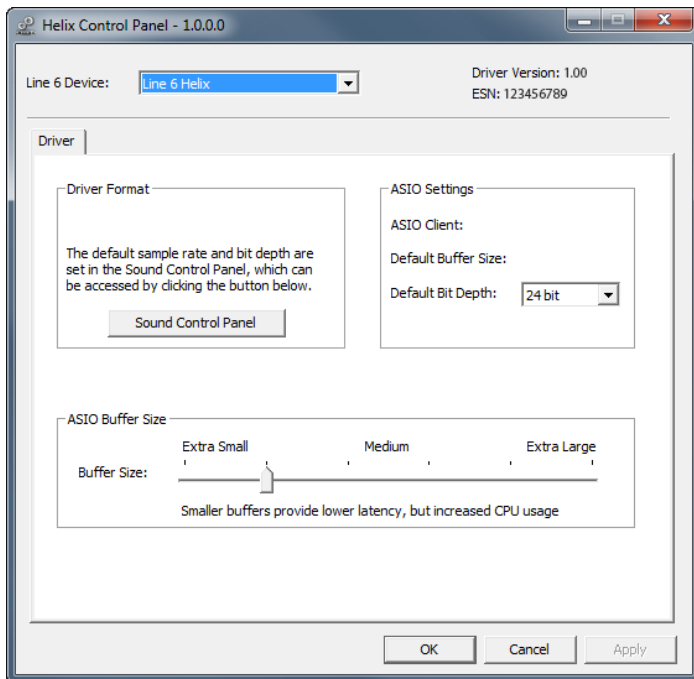
**TIP:** Note that you still have your original Guitar DI track, and you can repeat this process to create additional re-amped tracks with different Helix settings, add plug-ins, blend with your original guitar track and more.

# ASIO® Driver Settings (Windows® only)

When using Helix as an audio interface for Windows® DAW applications, it is highly recommended to configure the software to utilize the "ASIO®" Helix driver. The Line 6 ASIO® driver offers the superior, low-latency audio performance required for DAW recording. This driver selection is typically found in your DAW software's Preferences or Options dialog - see your software's documentation.

**NOTE:** Download and install the latest Line 6 Helix ASIO® driver from [line6.com/software](http://line6.com/software).

Once the ASIO® Helix driver has been selected in your DAW software, you'll also see a button in the same dialog for "ASIO® Settings" (or with a similar title). Press this button to launch the Helix Control Panel, which is where you make the following Helix driver settings.



**Sound Control Panel** This button launches the Windows® Sound Control Panel, which is where you can optionally configure Helix to be the audio playback device for multi-media applications (such as Windows® Media Player, iTunes®, etc.) These settings are not relevant for your DAW software, since these applications utilize the standard Windows® driver.

**Default Bit Depth** Select the Bit Depth at which Helix will operate for recording and playback with your DAW software. 24 bit or 32 bit are recommended for quality audio production.

**ASIO® Buffer Size** Your goal is to achieve the lowest latency possible in your DAW software, but with glitch-free audio performance. Smaller buffer size results in lower latency, however, also increases the demands on your computer, which can result in clicks, pops or other audio artifacts. Start with a lower slider setting here and, if you encounter audio performance issues, come back to this panel and move this slider to the right incrementally to remedy the problem.

Click the Apply and OK buttons when your Helix Control Panel settings are complete to return to your DAW software. Please also refer to your DAW software's documentation for more about its own specific audio device, buffer and project settings.

# Core Audio Driver Settings (Mac® OS X only)

To use Helix as an audio interface for Mac® applications, it is not necessary to install any additional driver. Helix will utilize the Mac® computer's "Class Compliant" USB driver automatically simply by connecting to your USB port. Helix will then appear as a selectable Core Audio device within the Mac® Utilities > Audio MIDI Setup panel and/or directly within your audio and multimedia applications. However, note that this Apple Class Compliant driver offers strictly 48kHz native sample rate operation. If you prefer to use a different native sample rate (or if your particular DAW application requires it), you can optionally download and install the Line 6 Mac® Core Audio driver from [line6.com/software](http://line6.com/software). This Line 6 driver offers 44.1kHz, 48kHz, 88kHz or 96kHz sample rate operation.



# MIDI

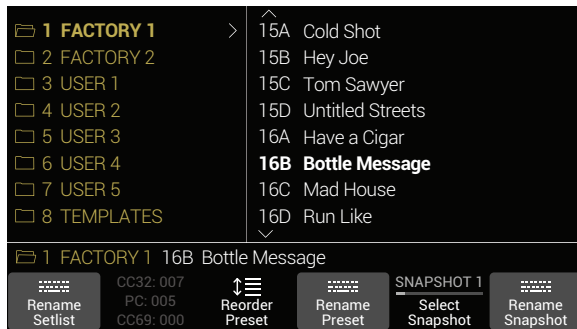
**NOTE:** Helix transmits and responds to MIDI messages over USB in the same manner as via its MIDI connectors. For USB MIDI operation on Windows® computers, it is necessary to download and install the Line 6 Helix ASIO® driver, available from [line6.com/software](http://line6.com/software). There is no driver installation necessary for an Apple Mac computer, iPad or iPhone.

## MIDI Bank/Program Changes

Helix responds to traditional MIDI CC and Program change messages from an external MIDI device (or from MIDI software via USB) and will recall setlists, presets, and/or snapshots accordingly.

### Remotely Selecting a Setlist, Preset, and/or Snapshot

Press **PRESETS** to open the Setlist menu:

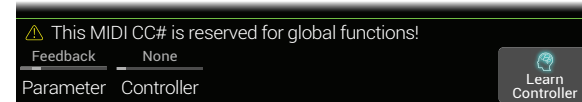


The dark text above Knob 2 displays the required MIDI messages for recalling the Helix device's setlists, presets, and/or snapshots from external MIDI devices or software. In the illustration above, the **FACTORY 1** setlist is recalled with a CC32 message of 007, the **16B Bottle Message** preset is recalled with a PC (program change) message of 005, and **SNAPSHOT 1** is recalled with a CC69 message of 000.

**NOTE:** When navigating Presets from the Helix hardware (PRESETS encoder, preset footswitches, PRESET ^ / PRESET v, etc.), Helix automatically transmits a MIDI Program Change message corresponding to the selected preset. If you'd prefer Helix to not automatically transmit or receive PC messages, turn "[Global Settings > MIDI/Tempo](#)" > Knob 4 (MIDI PC Send/Receive) off.

## MIDI CC

Helix has reserved specific MIDI CC messages for global functions; these CCs cannot be used as controllers. If you attempt to learn a CC message reserved for global functions (see "[Controller Assign](#)"), the following dialog appears:



MIDI CC#	Value	Function
<b>Pedal and Footswitch Assignments</b>		
1	0-127	Emulates EXP 1 Pedal
2	0-127	Emulates EXP 2 Pedal
3	0-127	Emulates EXP 3 Pedal
49	0-127	Emulates Stomp footswitch mode's FS1
50	0-127	Emulates Stomp footswitch mode's FS2
51	0-127	Emulates Stomp footswitch mode's FS3
52	0-127	Emulates Stomp footswitch mode's FS4
53	0-127	Emulates Stomp footswitch mode's FS5
54	0-127	Emulates Stomp footswitch mode's FS7
55	0-127	Emulates Stomp footswitch mode's FS8
56	0-127	Emulates Stomp footswitch mode's FS9
57	0-127	Emulates Stomp footswitch mode's FS10
58	0-127	Emulates Stomp footswitch mode's FS11
59	0-127	Emulates EXP Toe switch
<b>Looper Controls</b>		
60	0-63: Overdub; 64-127: Record	Looper Record/Overdub switch (FS8)
61	0-63: Stop; 64-127: Play	Looper Play/Stop switch (FS9)
62	64-127	Looper Play Once switch (FS3)
63	64-127	Looper Undo switch (FS2)
65	0-63: Forward; 64-127: Reverse	Looper Forward/Reverse switch (FS11)

MIDI CC#	Value	Function
66	0-63: Full; 64-127: Half	Looper Full/Half Speed switch (FS10)
67	0-63: Off; 64-127: On	Looper block on/off (if available); also enters/exits Looper footswitch mode
<b>Additional Controls</b>		
0	0-7	Bank MSB
32	0-7	Bank LSB—Setlist select
64	64-127	Tap Tempo
68	0-127	Tuner screen on/off
69	0-7	Snapshot select
70	0-127	Additional global MIDI commands (reserved for future use)
71	0-127	
72	0-127	
73	0-127	
74	0-127	
75	0-127	
76	0-127	
128	0-63: Oh; 64-127: Nooo	

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